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What Ails Motor Boat Racing?

By HERBERT L. STONE

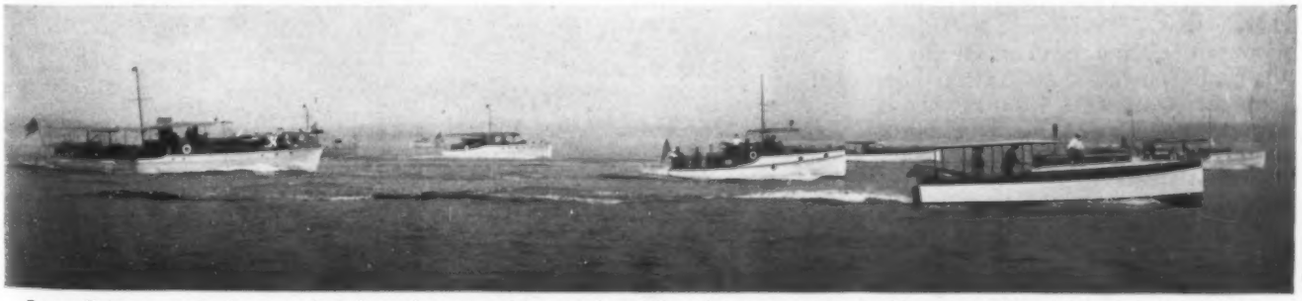
Some suggestions for increasing the interest in the sport and eliminating some of the abuses, with a plea for a simple rating rule that will remain unchanged for a term of years

NOW that the war is over and all sports bid fair to be taken up again on a peace-time basis, those who turn to the water for their recreation are naturally interested in the revival of yachting and motor boating. It may be said at the outset that all signs point to an unusually good year afloat and that there will be more boats out and more men going in for motor boating and sailing than ever before. In fact, unless all signs fail, there will be hardly enough boats to go around and to satisfy all those who want to become skippers; for there was practically no building of pleasure boats during the two years we were at war and, in spite of the fact of there now being many boats released from government service that will find their way back to the uses for which they were originally built, Congress still has a strangle hold on pleasure boat building in the shape of various kinds and degrees of taxes that has prevented the usual crop of boats being built this winter.

There are two events scheduled this summer that will focus attention on the sport to an unusual degree. These are, the races for the America's Cup and the races in English waters for the British International Trophy, for which Mr. Wood has challenged. And while it is usually held that international events do not make for a good season, by and large, in that they rather overshadow other scheduled races, it should not be so this year. Surely the race for the B. I. T. in England will not curtail any of the motor boat events on this side, while the America's Cup race, having somewhat lost its "kick" after a postponement of six years and without the attendant trial races between new and unknown boats to absorb interest and upset the season, should not affect adversely the yacht racing season as a whole. Even if this were not true, the return to the sport of those who have been out of it for three years (many of them in France), with their eagerness to get into a race again, should more than offset any curtailment in the season's racing schedule that the two big events might have brought about under normal conditions.

In the last analysis it is the racing that counts and the regatta days that boom a season's yachting. Whether one be a racing or a cruising man, he must acknowledge this fact. For even the strictly cruising "yachter" or "motor boater" is at heart a potential racing man, and the spirit of competition is inherent in all of us as shown by the desire to put any boat we may hook up with behind us in the shortest possible time. It is for this reason that squadron and club cruises exist only by reason of their racing features. This being so, the prospects for the season's motor boat racing may be discussed with profit, especially in the light of the developments in that branch of the sport before the war. More particularly are we concerned with motor boat racing because it is not on as stable a basis as is sailing racing, has not the long years of tradition behind it and has developed in rather a haphazard manner, while certain evils and abuses have crept into it which should be taken in hand and eliminated.

In the past, racing with mechanically propelled craft has not made the same appeal as a sporting proposition as has racing with sail boats because it was felt that there was not the same chance for the display of skill, resourcefulness and tactics as was possible in making use of the elements alone, and that in power boats the man with the most power always won. But this is true only in a measure, and there is still ample play for all these qualities in getting the most out of all the elements that govern speed upon the water, no matter what the type of craft. The knowledge of local conditions, taking advantage of favorable tide or current, making the most of those points in which your boat excels, judgment in timing starts, steering a straight course in order to minimize drag of the rudder, and the constant striving to save a second here and a second there all have their bearing on the result, so that even in power boats the race is not always to the swift. I remember in one of the Marblehead races how one of the boats was handled by a man who knew the course and had studied carefully tidal and water conditions and who put it all over another and faster boat



Long distance motor boat racing gives the man with superior skill a chance to profit by his seamanship and knowledge of tides and currents and his ability to get the most out of his engine. Such a contest as the Block Island Race should bring out a larger number of entries than it has in the past.

H. R. Duckwall's express cruiser Hoosier V has been doing some spectacular racing in Florida. On February 14 she covered the course from Miami to Bimini and return in three hours, 55 minutes and 53 seconds—27.8 miles an hour for 109 miles. She is 42 feet over all, 9 feet 11 inches beam and 2 feet 6 inches draught. A pair of 225 H. P. model GR 6-cylinder Sterlings drive her

whose skipper thought all he had to do was to steer a straight course from port to port. Whenever these two boats came together, the faster one always walked away from the slower; but once out of sight the skipper of the slower was free to use all the knowledge of local conditions he possessed, to cut corners and save time where he could, and thus he caught and passed the faster boat several times in the course of the race, eventually saving his time over a boat that on paper had the race sewed up.

Of course there is more chance to pull stuff like this in a long race or in a race at night, but every one who has ever raced can always look back on any one contest he has been in and seen where he could have saved some time. If one can actually save this time in the race itself he has always got a chance, especially in events where the boats are any ways equitably handicapped. Power boat men in the past have seemingly been too prone to want a guarantee before they started that they were going to win, and have lost sight of the old adage, as true in motor boat racing as in any other kind of racing, that "no race is lost until it is won."

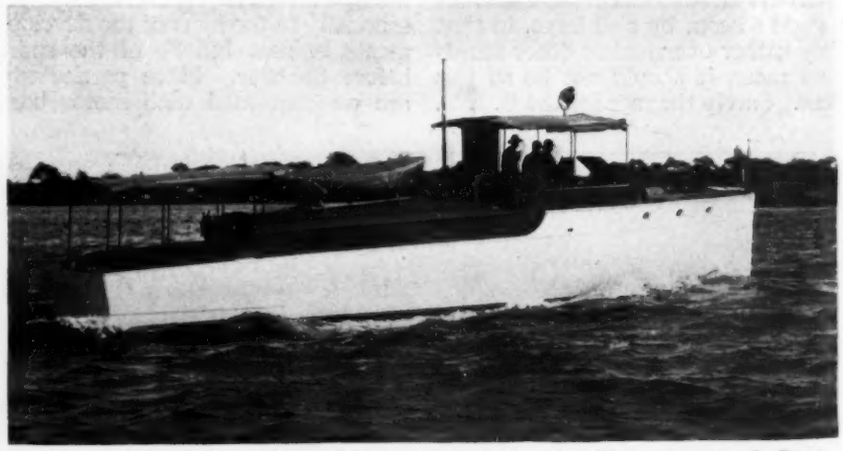
In addition to these points it is always incumbent in power boat racing to keep your power plant up to the very top notch of efficiency and to get out of it every ounce of power there is in it. It is strange how much more power some men can get out of the same engine than others, how some men seem to be wizards when it comes to making a gasoline motor turn up—and one should always endeavor to become one of the wizards.

Of course, in racing mixed classes of boats, some sort of rating rule for handicapping has to be devised, and on the equity of the rule and the understanding of it by the boat owners largely depends the success of power boat racing, outside of the big events such as that for the Gold Cup, with no limit to power, and in one-design classes, of which there are too few. And it is probable that rating rules of the past have been the cause of more broken friendships and have put more racing events on the rocks than any one thing that has come into the sport.

The rating rule most commonly used at present is the A. P. B. A. rule. This rule has undergone many changes in its evolution from the more or less simple formula first devised to equalize the various elements entering into the handicapping of power-driven craft, until to-day it is so technical and complicated that only a naval architect or a man with a technical education can thoroughly understand it. For that reason it is mistrusted by many boat owners who would like to race if they felt that their boats had a fair show under the rule. And as it has been tinkered with each year and changed from time to time—often, it is true, to correct necessary evils—no one has known where he stood from year to year or has been sure how his boat would fare under the rules from one season to another.

There have been charges, also, that this and other rules, devised for the same purpose, have been so framed as to favor certain makes of engines and so that no other engine would have a chance in rating under its provisions. Whether or not these charges have been true, or whether the engines so favored have just happened to be of such design as to get the most power for their size, the charge has disgusted many with this rule, or with any complicated and technical rule at all.

What is wanted to restore confidence is as simple a rule as possible and one that any one may understand without going to a naval architect to find out just how one's boat would rate under it. Unless one is in the racing game regularly one does not want to go to an expert to have his boat measured for every race he goes into. Then adopt this rule for a certain fixed period of time with no changes, so that in building one would know just where he stood for a certain number of years at least. Of course, some one would then come

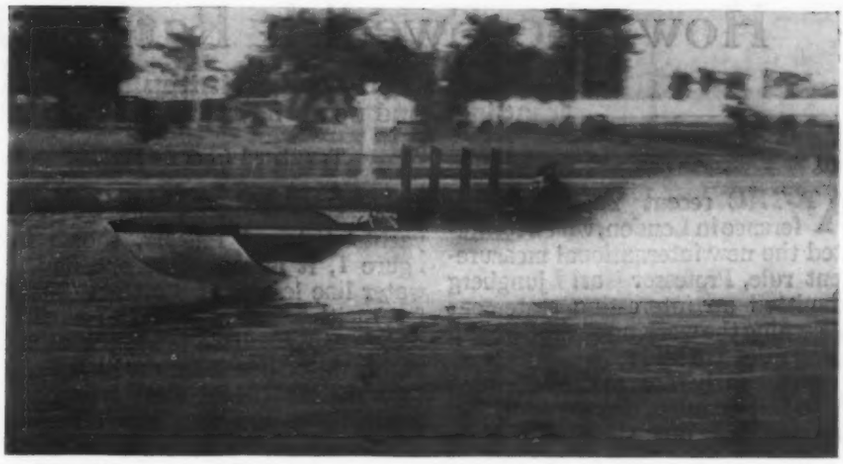


Hylda, owned by J. K. L. Ross of Montreal, was designed by Tams, Lemoine & Crane. She is 48 feet over all and can make 23 miles an hour. A proper rating rule would care for a boat of this type

along and build a boat designed especially to beat this rule and might get away with it for a season, but with the elements of good design in the boat and proper engine design carefully guarded (a difficult task, but not an insurmountable one), this would only stimulate others to improve on such a boat and the success of the rule beater would be short-lived. In the sailing end of the game the present rating rule is not only simple enough in principle for any one to understand (though the actual measurement of displacement is a highly technical operation) but has stood practically unchanged for many years with general satisfaction to the racing men.

The present A. P. B. A. rule contains much that is good and, very properly, differentiates between cruising boats and purely racing craft; but a simplification and a clarification of it might do much to popularize motor boat racing under it.

There are many other ways of racing power boats and getting good sport out of it other than by using a rating rule, and a number of these have been tried with more or less success. The actual performance basis has proved fairly satisfactory and would be more so if power boat owners were more honest when it came to getting some line on the actual speed of their boats. In the past many of them have gone on the assumption that it is entirely up to the handicapper or committee to find out the true speed of their boats, and that if they could fool them by not showing the true speed it was a perfectly justifiable thing to do. Various ways of overcoming this "crooked" tendency have been devised, but if the boat owners themselves won't lend some help, and care more for winning than for the cleanness and honesty and fun of the sport —why, what's the use?



Out and out racers should, of course, be kept in a class by themselves and for such craft the fewer restrictions there are, the better. This one is Leopard III, a 20 foot hydroplane that has made a speed of 46 miles per hour over a 30 mile course

In sail boat racing a system of handicapping on past performances has been worked out and perfected and has given excellent and satisfactory results for some 15 years and has made racing possible between mixed types and for boats that did not fit the regular rating rules. The same might be done, with a little ingenuity, for power boats. But the men themselves would have to play the game on the square to make it a success. That is one of the essentials.

Long distance racing ought to be more popular than it is, as events of this kind do more to bring out and develop all around seamanship, navigation and boat handling than almost any other kind of racing. It also has the added advantage of taking one outside of the waters one is familiar with; and if the races are run at night they put a premium on careful and accurate navigation that should be encouraged. During the war it was lamentable to see how many men fell down on running at night. Men who were dependable during daylight became confused at night, mistook lights, misjudged distances and were not familiar with the precautions necessary to keep the exact position of their vessel known at all times. As a result they frequently got into trouble. And yet many of these men had been considered experienced motor boat sailors. The trouble was that their experience had been confined to daylight running.

So long distance races should be encouraged. I do not mean such long races as those to Bermuda—these take too much time and are too expensive. But races that take from 24 to 36 hours and that can be run over a week end or a holiday could be made very popular. It is the long distance racing that brings out resourcefulness and gives the man who knows his business the best chance, irrespective of whether or not he has the fastest boat and in the end it is skill that we should seek to bring out in racing and not mere mechanical perfection.

And, above all, no matter in what class or kind of races one takes part, he should learn to play the game on the level. The hiding of the true power of your engine or the speed of your boat to fool the race committee, the using of picric acid or other dope to increase the power of your fuel, and all the other tricks which it is possible to get away with if one is "slick," should have no place in the sport if one wants to get out of it all there is in it. It is no more honest to use such tactics than it is to cut a buoy in a race just because no one is around to see you do it. The latter is an unforgivable offence in the eyes of a true sportsman. The former should be also.

Kitsix was built to race in the cabin class of the A. P. B. A. She had large power (for her day) and was a fast boat, but she could not win from some of the low powered slow rule beaters though she could run them out of sight in an hour

How the Swedish Rating Rule Works

Maximum sail area, minimum displacement and scantlings, and boats have grown bigger all the time

Translated from *Le Yacht*

AT THE recent Yachting Conference in London, which formulated the new international measurement rule, Professor Karl Ljungberg submitted an interesting statement concerning the working of the Swedish rating rule. He said:

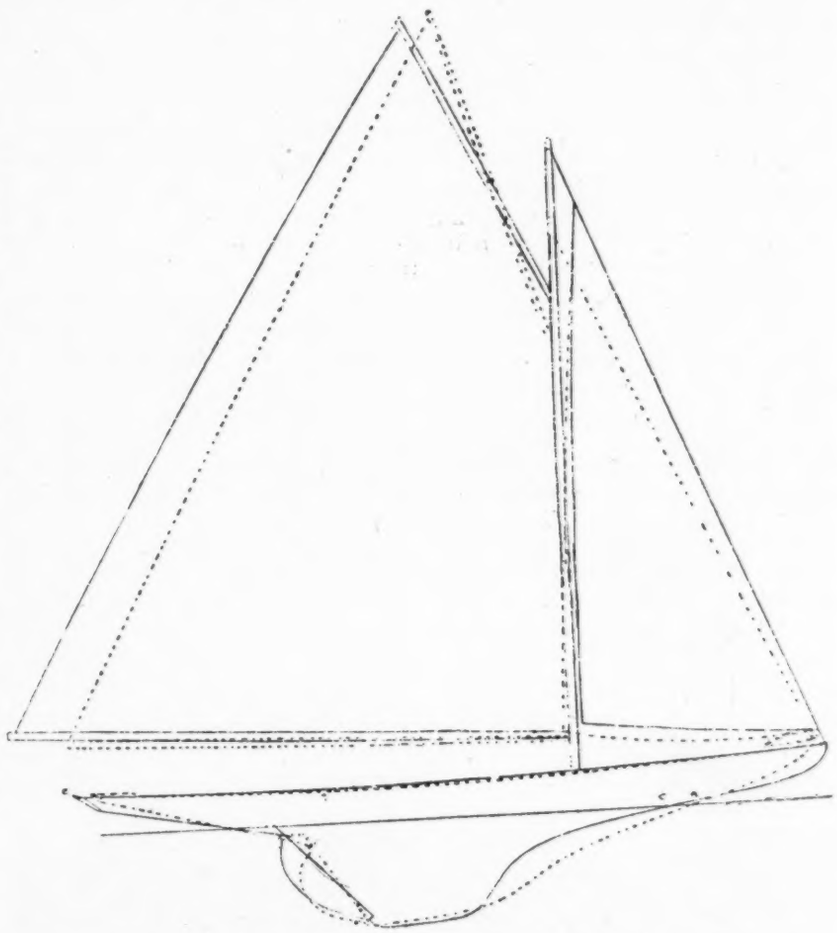
"In the early races at the beginning of the last century, there was neither measurement nor time allowance; the yacht which finished the course in the shortest time was the winner. However, it soon became evident that larger yachts had an advantage since, for the same form, the big boat is always faster than the little one. Yachtsmen then had to choose a dimension on which to base classification. This was a simple matter as long as only similar yachts were measured. Indeed, almost any one of the principal elements of a yacht, length, displacement or sail area, could be taken as the basis of classification. And yet it was soon shown that when a new yacht was designed under any particular measurement rule advantage could be taken of the formula by increasing certain measured dimensions and decreasing others. The end sought was the production of the largest possible yacht with the smallest possible rating under the rule.

"From this time rating rules may properly be dated. These rules, by introducing into the formulæ a great number of measurements, attempted to hinder the naval architect from taking advantage of them. In other words, the measurement formula took account of the several factors favorable to speed and, by their use in the formula, all these elements were penalized. The International Rule is an example.

"Is this the proper procedure?

"The object of yacht racing is to produce fast yachts, yet the measurement rules penalize all elements producing speed. Nor is this all. A yacht designed according to a certain formula may be a little faster than another one but the model of the faster boat may not be an improvement in naval architecture. Very often this increased speed is due to the fact that the naval architect, to cheat the rule, has designed a bigger boat with more sail by diminishing certain other factors more severely taxed in the formula.

"To make this clearer I will give a simple example taken from an older formula used in England and Sweden, $\frac{L \times S}{C}$. Comparing the two Swedish yachts *Eol* and *Phœnix*, shown in figure 1, it is seen that one had a water line length of 8 meters (26.25 feet) with a sail area of 78.7 square meters, (847 square feet); the other had a water line length a little less, 7.40 meters (24.28 feet) and consequently a sail area much larger, 88.7 square meters (955 square feet). In spite of the shorter water line, the hull of the latter boat was bigger and she carried, consequently, a larger sail plan which gave her more speed: I cannot say that her hull showed a real improvement in model.



A comparison of two sloops, one built in 1895 and one in 1904. The later boat is larger and carries more sail, but her water line is shorter

"The designer can likewise take advantage of several terms in the late International Rule; for instance, in the beam or the girth difference. By reducing these factors he may give the yacht more length and sail area, thus producing a bigger boat with a relatively small rating. It is doubtful that a yacht so designed represents a real technical progress. Numerous examples could be cited, and what I have just said applies to all rating rules in which the elements that contribute to speed are taxed. In my opinion the principle is wrong.

"When we established our national rating rules in Sweden we based them upon entirely different principles. This rule is called the 'skargard' rule or sometimes the square meter rule. For the only measurement of the yacht we take the sail area. That is to say, we have fixed a certain number of classes with certain sail areas. These are the 30, 40, 55, 75, 95, 120 and 150 square meter classes for yachts and the 15, 22 and 30 square meter classes for open boats. For each class there are prescribed a minimum displacement, minimum cabin accommodations and minimum scantlings.

"The owner may then build into the class in which he finds the accommodations he desires and the designer is free to give to the hull the model he believes best for the greatest speed. If by giving a greater displacement he can, by better lines and, perhaps, more length, design a better boat with the given sail plan, this will certainly be a progress that the owner will appreciate and reward. Yet in any other system of rating these accomplishments would be penalized.

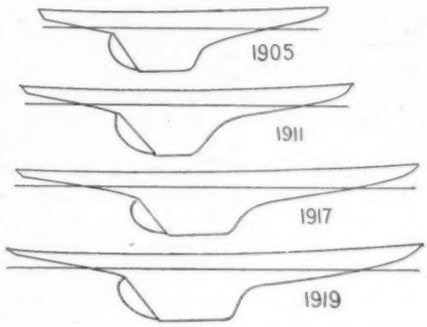
"Let us make a comparison with the designer of another type of ship to understand my thought better.

"A merchant orders an 18 knot ship for 500 passengers and a naval architect draws her plans with engines of a certain horse power. Another architect, with the same engines, finds a way of giving similar accommodations for 600 passengers and produces a ship with a speed of 18½ knots. The second designer has arrived at this result by giving the vessel better lines and, probably, more displacement and greater length. Will the merchant complain of this result?

"Here is another example, not from my imagination but from my experience. A dinghy 5 meters (16.4 feet) long and of 500 kilograms (1,100 pounds) displacement had a speed of 5½ knots with a 5 H. P. motor. The same motor was afterwards installed in a small cruiser 9½ meters (31.2 feet) long, of 2,500 kilograms (5,500 pounds) displacement and, with fewer revolutions per minute, the speed was 6 knots. This excellent result was obtained by the better distribution of the displacement upon a greater length.

"The development of our national classes has made it very clear that with the length judiciously fixed more speed may be obtained with the same motive power (sail area) even with greater displacement. Ten years ago the displacement of a 75 square meter yacht was 4,300 kilograms (9,482 pounds). Since then it has gradually increased until, in 1919, it was more than 5,400 kilograms (11,900 pounds)—and yet the later yacht is the faster. In the same period length has increased and, consequently, the cabin accommodations. Figure 2 shows the successive phases of this growth.

"The same development is shown in all our classes. From year to year displacement and the resulting accommodations have increased, but the speed obtained with the same sail area has also increased. I ask, is it judicious to penalize such a development by limiting the length?



How the 75 square meter "Skargards" have grown in 14 years; and the newer larger boats are faster than the older ones

"Under the old International Rule and the other rules in which length is taxed heavily, the yacht does not usually have the normal model required by the displacement but the displacement is associated with a boat too short for it, a disadvantage as well for cabin accommodations as for speed. To get the speed the sail area is increased and, consequently, the displacement has too great a driving force (sail area), which is not economical. Remember in this connection the launch and the small cruiser.

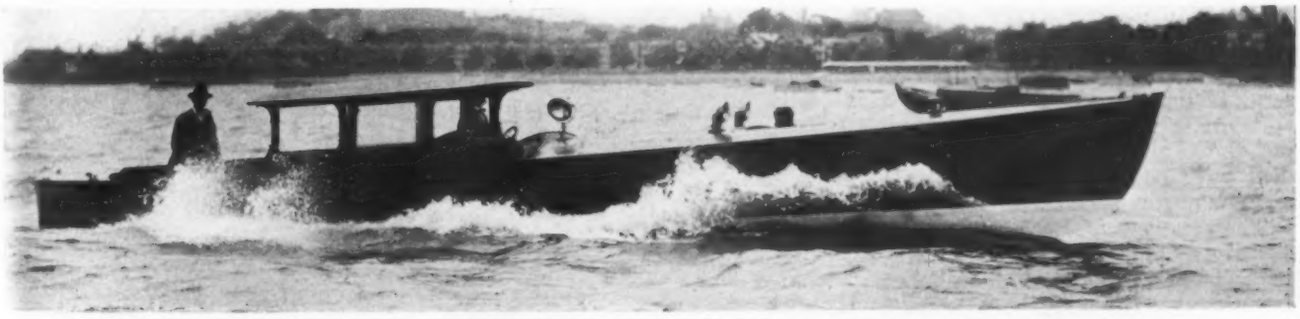
"To make another comparison, a yacht of the 150 square meter class, designed this year, has a displacement of 17 tons and accommodations equal to those of a 12-meter yacht under the International Rule, yet the 12-meter boat has over 20 tons displacement and a sail area of about 250 square meters. In any breeze except a very light one the 150 square meter yacht is the faster, and to windward in a fresh breeze she is at least 10 per cent superior.

"If we examine the reasons which permit the same accommodations to be provided in a boat of light displacement as in one greater, we find that it is because the designer may distribute the displacement upon a suitable length. Consequently, the midship section is different. The 150 square meter yacht has a wine glass section while the 12-meter yacht has one almost triangular. Besides, it is evident that a triangular section leaves useless space under the bunks in small yachts and below the cabin floor in big ones, while the wine glass section permits the best use of all interior space. In the International Rule yacht this lost space is recovered by giving the boat more displacement. To obtain the same speed, a greater sail area is then provided—which means a larger crew. Indeed, the 150 square meter yacht needs only two sailors where the 12-meter boat needs from four to six. And this additional expense of crew follows the faulty distribution of the displacement and the poor utilization of interior space. Considering the question from the standpoint of economy, there is no doubt that the Swedish formula presents a more advantageous solution of the problem than the International Rule. Under present conditions we must consider economy, that is to say, try to get the most from the smallest expense."

The author adds that this rating rule, during the dozen years it has been in force, has developed in a similar fashion in Sweden, Finland and Denmark.

Here are some figures which may help. A Swedish 40 square meter yacht is 27 feet long on the water line, 41 feet over all and 6 feet draught. Her sail area is 431 square feet.

A 150 square meter yacht is 51 feet on the water line and 78 feet overall. Her sail area is 1,615 square feet.



Fly Away, a 41 foot Lawley runabout powered with a 200 H. P. Sterling that drives her 30 miles an hour

Canada Attempts to Lift the Cup

The Countess of Dufferin and the Atalanta both fail to capture the famous trophy

By CHARLES H. HALL

MR. ASHBURY'S dispute with the New York Yacht Club over the races for the *America's* Cup performed one service for yachtsmen, it cleared up a number of disputed points and paved the way for more equitable contests in the future. However, the feeling engendered was so strong that no challenge was received for five years and then from a totally unexpected quarter.

In the spring of 1876, a letter was received from the Royal Canadian Yacht Club of Toronto challenging for a race that summer and asking that the six months' notice be waived. The yacht named in the challenge was the schooner *Countess of Dufferin*, owned by a syndicate headed by Major Charles Gifford, Vice Commodore of the Club. Anxious for a race, the New York Yacht Club not only waived the notice but offered a series of three races instead of a single contest. The series was to be held in July, one race was to be over the Club's regular inside course, one outside, and the third over the course to be determined by lot. If the challenger preferred, he had the option of sailing a race off Newport after the Club's annual cruise.

But Major Gifford asked even more than this; he wanted the Club to pick a single defending yacht instead of naming the defender on the morning of each race as it had done in the last contest. As he stated his position, he had to pick one yacht and take all the chances of light or heavy weather; the defending club ought to do the same. This request caused a great deal of newspaper discussion and the Club's action in acceding to the challenger's desires was severely condemned by many writers. Their attitude was that Major Gifford should have been allowed only the terms under which Mr. Ashbury raced and, in short, that the challenger should be given just as little chance as possible. Accustomed as we are to a long series of match races for the Cup, it seems to us that the Club was granting the challenger merely a square deal, but we have come a long way in sportsmanship since the seventies.

The *Countess of Dufferin* was designed and built by Alexander Cuthbert who had turned out a number of fast sloops. His most notable craft was the sloop *Annie Cuthbert*, built to beat an American yacht turned out by Pat MacGiehan of Pamrapo, N. J., which had been winning all the races on Lake Ontario for several years. The *Annie Cuthbert* was successful in defeating the Yankee and the Canadians immediately had visions of winning the America's Cup. A syndicate was formed, the *Countess of Dufferin* started and the challenge sent.

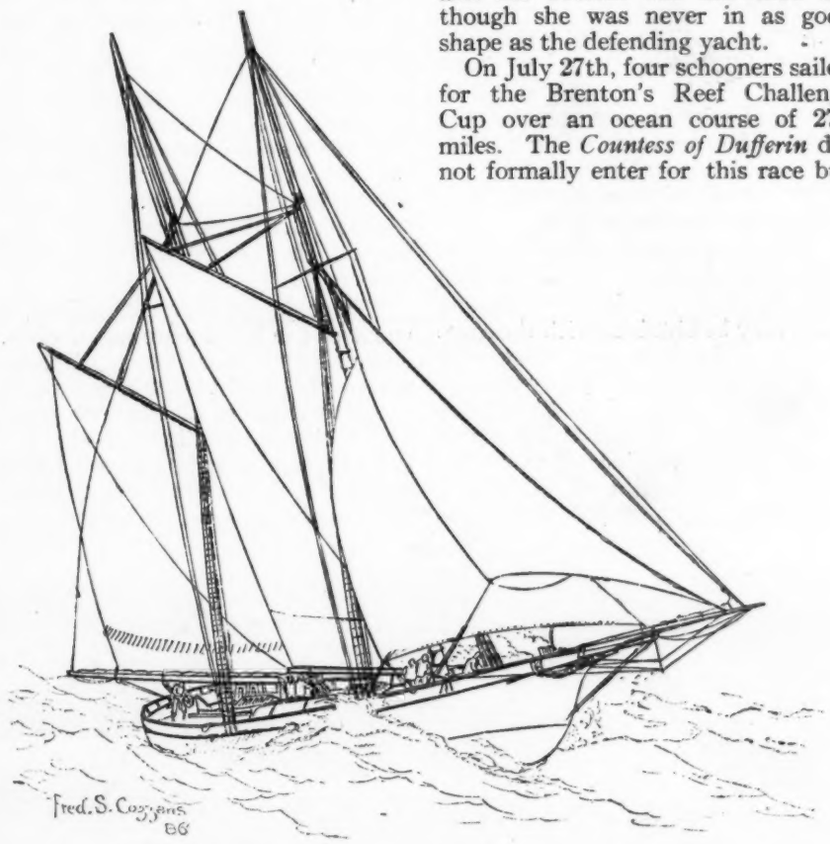
Cuthbert's yachts were of the beamy, shoal, American type though he did not copy American yachts. He was a "rule of thumb" builder but had ideas of his own and possessed considerable skill. The *Countess of Dufferin* and the later challenger *Atalanta* were both handicapped by lack of funds and, consequently, were poorly finished, rigged and equipped.

The Canadian challenger was 107 feet long over all, 24 feet beam and drew 6½ feet of water. She was a centerboard craft, very sharp forward, and looked like the prevailing American yacht of the period. On her way down from the Lakes, the telegraph recorded her movements and, according to these highly seasoned reports, she was a flyer of most wonderful speed. "We raced two flying coasters early this morning, for thirty miles, beating them hollow" wrote one correspondent, adding: "The seagoing qualities of our boat are fully established." Another wrote: "The yacht makes tremendous running."

Meantime, in response to a request from Major Gifford the Cup Races fixed for the tenth and twelfth of July had been postponed to a later date.

The *Countess of Dufferin* arrived at New York on July 17th. When she was hauled out to have her bottom cleaned she was found to be as rough as a nutmeg grater. The idea of putting a yacht like the *Madeleine* against her seemed absurd as there were scores of fishing schooners in this country which were better looking and undoubtedly faster. She was extensively refitted in New York, her sails were sent ashore to be recut and her bottom was smoothed up, though she was never in as good shape as the defending yacht.

On July 27th, four schooners sailed for the Brenton's Reef Challenge Cup over an ocean course of 275 miles. The *Countess of Dufferin* did not formally enter for this race but



Madeleine was probably the fastest schooner yacht in the United States in 1876. She was nicknamed the "Mughunter"

her owner started with the other yachts "just to see what she could do." She was beaten so badly that the crews of the other schooners forgot that she was sailing with them.

The New York Yacht Club chose as the defender the schooner yacht *Madeleine* owned by John S. Dickerson, Commodore of the Brooklyn Yacht Club. She was undoubtedly the fastest all around schooner in the country and had won so many cups that she was nicknamed the "Mug-hunter." She was built in 1868, as a sloop, by David Kirby of Rye, N. Y. Yachtsmen in those days did not build a new boat every year or so but made alterations in the old one, lengthening her forward one year, aft the next, changing her rig and so on. The *Madeleine* finally grew to be a schooner 106 feet long overall, 24 feet beam, and 7 feet 4 inches draft. In 1873 she is said to have won every race in which she started, and she had been a consistent performer ever since.

After the showing his boat made over the Brenton's Reef course, Major Gifford asked a further postponement to allow him to get some new light sails made. The race was finally set for August 11th and when the challenger appeared at the line she had not only new light sails but a new foresail and mainsail of American make as well. Captain Cuthbert, her builder and sailing master, was a friend of the Ellsworths of Bayonne, expert yacht racers from their boyhood. Acting on their advice the *Countess* had been hauled out, scraped, sandpapered and made as smooth as possible, and then given a coat of pot lead and tallow.

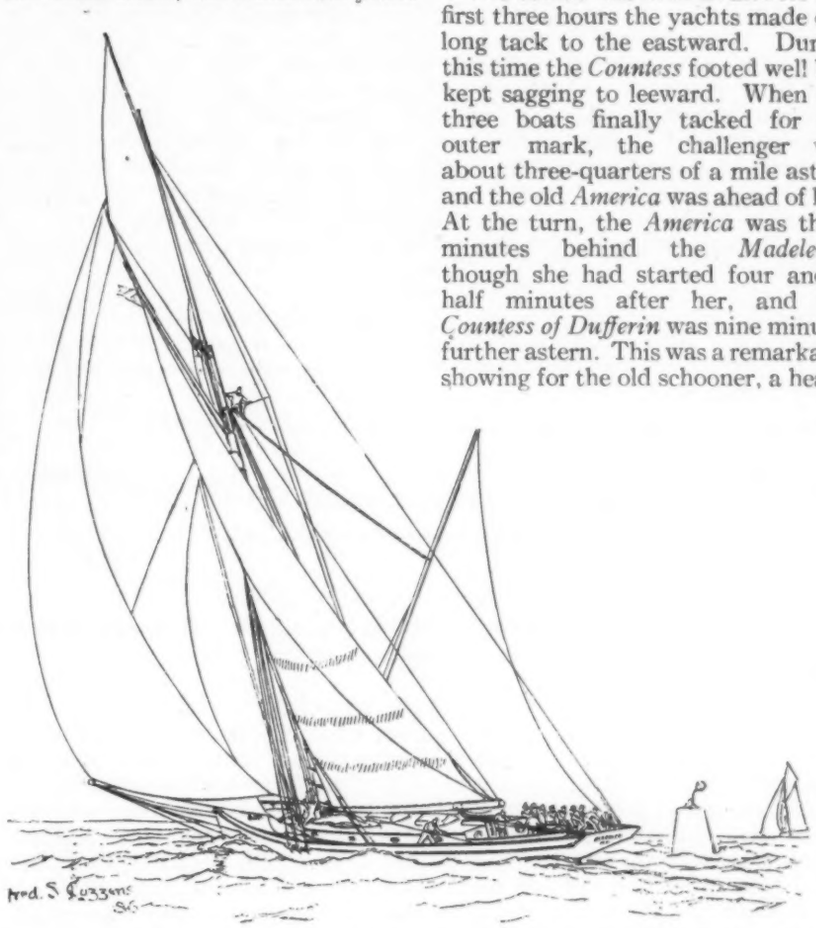
The race was over the regular New York Yacht Club inside course and the start was a flying one. As the two boats jockeyed for position, Captain Cuthbert threw away a splendid chance of going over first as he was coming down with a good rap full when the gun was fired. But he bore off and the *Madeleine* took the weather berth, blanketing the challenger and killing her way so that she was over half a minute behind in starting as well as to leeward. *Madeleine* was in perfect condition, her coppered bottom having been polished and given a coat of oil and tallow while her topsides were potleaded until they were as slippery as glass.

The wind was ahead and it was a beat from the starting line to the South West Spit buoy. *Madeleine* began to leave the Canadian at once and had gained ten minutes on the beat down the bay. Outside the Hook the *Countess* headed out to the southward looking for a slant that would enable her to make up her lost ground. But *Madeleine's* skipper was too old a hand to let her go off alone and tacked after her. When they finally came about to head for the outer mark, the American yacht overstood the lightship and thus lost several minutes. The Canadian judged the distance better and was only four minutes and forty-one seconds behind at the turn.

On the run up the bay both boats piled on the canvas and tore along at a fast pace. *Madeleine* continued to gain and crossed the finish line nearly ten minutes ahead though she had lost some of the breeze under the Staten Island shore, which enabled the *Countess* to close up the gap considerably. *Madeleine's* elapsed time was 5 hours, 24 minutes and 55 seconds, and she won by 10 minutes, 59 seconds corrected time.

The course for the second race, sailed on the following day, was twenty miles to windward from Sandy Hook and return. The wind was light throughout and the water smooth. The *Countess of Dufferin* was sailed by Captain Joe Ellsworth, but the race of the day before had settled the question of superiority and the principal interest in the race was in the performance of the veteran *America*. Stripped for the contest, she went over the course with the other two yachts and showed that she could still travel fast in spite of her twenty-five years.

The course was S. S. E. and for the first three hours the yachts made one long tack to the eastward. During this time the *Countess* footed well but kept sagging to leeward. When the three boats finally tacked for the outer mark, the challenger was about three-quarters of a mile astern and the old *America* was ahead of her. At the turn, the *America* was three minutes behind the *Madeleine*, though she had started four and a half minutes after her, and the *Countess of Dufferin* was nine minutes further astern. This was a remarkable showing for the old schooner, a heavy displacement keel yacht, racing in smooth water against two light draft centerboarders.



Mischief, designed by A. Cary Smith, was the second iron yacht built in this country and was consistently fast

The run home was slow and uninteresting as the wind gradually failed and it was dark before the leader finished. *Madeleine* beat the *Countess* by 27 minutes and 14 seconds and the *America* finished over 19 minutes ahead of the challenger.

After the race the *Countess of Dufferin* was stripped and laid up in New York and Captain Cuthbert, who owned the largest share in her, attached her in an effort to force Major Gifford to sell his share. Cuthbert wanted to raise enough money to alter the yacht and challenge again but the plans fell through and she was finally disposed of at a sheriff's sale and eventually found her way back to the Lakes.

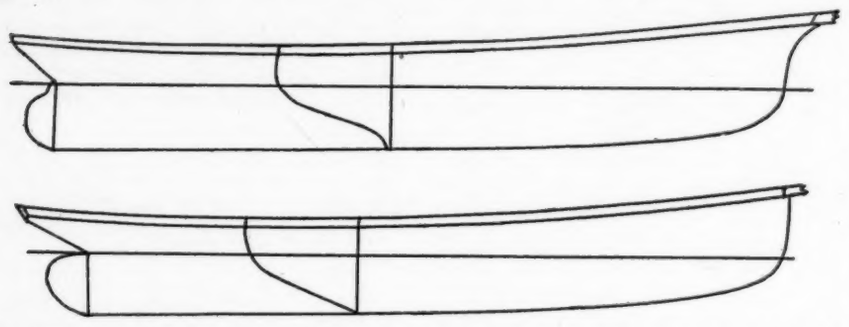
For five years Cuthbert was busy preparing for another challenge and in 1881 he designed a centerboard sloop very much like the celebrated *Annie Cuthbert* and started construction. He was then a member of

a progressive little club on Lake Ontario called the Bay of Quinte Yacht Club whose secretary challenged in May, 1881, naming the *Atalanta*, then on the stocks. As had happened before, the challenge requested the New York Yacht Club to waive the six months' notice and asked for a race that autumn. Captain Coffin, in his *History of American Yachting*, said that this challenge "was prompted solely by the desire of Captain Cuthbert for the advertisement and consequent increase of business which the notoriety of building a challenging yacht would give. The schooner he had built proved a failure but he asserted that he could build a sloop which could beat any of the American single sticked vessels and a schooner could not be put against her with any chance of success because there was in the New York Yacht Club rules no allowance for difference of rig." The New York Yacht Club accepted the challenge and offered a series of three races in September. The Canadians then asked the defending club to define its position on sailing one boat against the challenger or claiming the right to name a different boat for each race. The America's Cup Committee reported on this to the officers of the Club, "We do not doubt the right of the club to reserve an answer to this question or, under the terms of the Deed of Gift, to take the position that it is entitled to name a boat on the morning of each race, but our judgment is that the most liberal and sportsmanlike terms should be offered to the challenging yacht." The officers of the Club concurred in this view saying: "We sincerely trust that the interpretations of the Deed of Gift may be so liberal and sportsmanlike as to be beyond cavil."

There was the usual discussion in the papers and the New York Yacht Club was alternately praised and blamed for its stand.

The *Atalanta* was delayed in building, not being launched until September 17th. After a very brief tuning up she was prepared for the journey to New York. The route pursued was a novel one for an America's Cup contender for, instead of sailing down the St. Lawrence and around outside to New York, she made the trip by mule power through the Erie Canal! She was so wide that she had to be heeled over on one bilge by shifting her ballast and she arrived in New York in this ignominious fashion, with her spars lashed on deck, on October 30th, long after the normal yachting season was over.

The *Atalanta* was the first sloop that had challenged for the cup and most of our yachting fleet at that time were schooners. We had the sloops *Mischief*, *Gracie*, *Fanny*, *Vision* and *Hildegarde* but the flag officers of the New York Yacht Club decided that a new boat ought to be built. Probably the fastest sloop we had was the *Arrow* but she was owned outside of the New York Yacht Club and was not as large as the challenger. She had been built by Kirby, builder of the *Madeleine*, who guaranteed to build a sloop that would be faster than the *Arrow*. He was given the order and the *Pocahontas* was the result. She is notable in being the first yacht built for the defense of the America's Cup, but was unfortunate in earning the nickname of "Poky."



Profiles and midship sections of Atalanta (above) and Mischief, the challenger and defender of 1881

Trial races were held between *Mischief*, *Gracie*, *Pocahontas* and *Hildegarde* in New York Bay. The first contest was on October 13th, in a fresh breeze, and was won by *Mischief*, *Gracie* and *Pocahontas* both losing their topmasts. *Gracie* won the second race, beating *Mischief* by nearly four minutes, *Pocahontas* being far astern. *Mischief* took the third race from *Gracie* by 14 seconds, and the poor old "Poky" was put out of commission. There was a good deal of feeling caused by the committee's decision to pick the *Mischief*, for she and *Gracie* were so evenly matched that it was a hard matter to choose between them.

Atalanta, the challenger, was 70 feet long over all, 64 feet water line, 19 feet beam and 5 feet 6 inches draft. *Mischief* was a little smaller as she was 67 feet 5 inches over all, 61 feet water line, 19 feet 10 inches beam, and 5 feet 4 inches draft. She was what we called then a "compromise sloop" and was built of iron, being the second iron yacht constructed in this country. She was designed by A. Cary Smith, then coming into prominence as one of the new school of scientific naval architects who have replaced the old "rule of thumb" builders. *Mischief* was a fine able sloop and had performed well in a race in bad weather outside, drowning out her shoal competitors.

The first cup race was scheduled for November 8th but the day was windless and foggy so it was postponed until the 9th. The start was made in a fresh southwest wind and the *Atalanta* had a single reef tied down, while neither yacht carried a topsail. Outside the Narrows both yachts set working topsails, though the *Atalanta* did not shake out the reef in her mainsail. *Mischief* began to leave her competitor at the start and her lead was never threatened. On the run home the wind freshened and topsails came in, *Atalanta* dropping astern all the time. The real interest was supplied by the *Gracie* which started over the course ten minutes after the others. She caught and passed the Canadian before reaching the Spit, and on the last leg passed *Mischief* to leeward and crossed the line a minute to the good. *Mischief* beat *Atalanta* over 31 minutes elapsed time and 28 minutes corrected time.

The second race was held on November 10th and was over an outside course of 16 miles to leeward and return. The wind was fresh though both yachts held on to their topsails in the run before it. The Canadian held the *Mischief* fairly well on the run to leeward and was only 2 minutes and 15 seconds to the bad at the outer mark. As the turn was neared both topsails came in and a reef was tied in the mainsails for the thrash home. *Mischief* jibed around the mark and walked out to windward in a wonderful way. *Gracie* had again started 10 minutes late and had made a pretty race to the outer mark but she could not go to windward with the "iron pot." *Mischief* finished over 38 minutes ahead of the challenger and over 10 minutes in advance of *Gracie* on actual time, for *Gracie* allowed her nearly five minutes for the course and *Mischief* had gained nearly six minutes on the beat to windward. Her designer sailed on her and he says, "We took in the jib topsail and

(Continued on page 131)

Some Hints on Buying a Boat

A few things to look for in an inspection of a prospective purchase

By HENRY C. AMES

DID you ever know a sailorman who would admit that his beloved craft had faults? He might cuss her out to himself, but no one else could criticize and, when he finally decided to dispose of her, she became a paragon. Only his need for a larger boat, or some other excuse, made him part with her.

So the would-be buyer has to make —or have some one else make for him —a careful inspection of his prospective purchase, for the seller is blind to his darling's shortcomings. Even then, unless the buyer is an expert, he is liable to be stuck, for few yachtsmen have any real knowledge of construction or know where to look for weak spots. Too often defects are covered with a fresh coat of paint.

So the best way to buy a boat is to do so through a responsible yacht broker. The broker has on file a large list of yachts, with their pictures and descriptions. He knows what their condition is, how their cabins are arranged, whether their equipment is complete or not. He knows when they were built and who built them, and he also knows their builder's reputation for careful workmanship or the reverse. His fee, paid by the seller, is moderate and is well earned. He will save you a lot of running around and looking at unsuitable boats, once you have made plain to him—and incidentally to yourself—just what you want.

When it comes to closing the deal, the broker knows all the technicalities that must be attended to and will see that the buyer gets a proper bill of sale, that the inventory is checked up and complete, that the insurance is transferred and so on. In a word, the yacht broker is a specialist and can do well what the average yachtsman can do poorly, if at all. Indeed, men at times buy yachts that they have not seen, so complete is the broker's information.

But in buying it is well to deal with a single broker for, if you give several firms your requirements, there is a probability that more than one will offer you the same boat and the seller, receiving offers through a number of brokers, may imagine that as many purchasers are after the boat. This false impression will naturally tend to make him less inclined to make any concessions on his asking price.

In any case, the first thing to do when buying a boat is to decide just what you want and, what is as important, what you don't want. This will save many hours and many dollars in carfare that would be wasted in fruitless trips to some inaccessible yacht yard to inspect some hopeless old tubs. Make up your mind as to the type of boat you want and what you are going to use her for. There's no sense in buying a deep draught seagoing cruiser if you're going to use her for afternoon sailing in shallow waters. Nor would one buy a Florida houseboat for a cruise to Nova Scotia. Such a purchase would obviously be ridiculous, but boat buyers do things almost as foolish. Men buy a fine, able cruiser, fit to go anywhere, and she lies at a mooring most of the summer and makes a few runs of an hour or two. She may have fine accommodations for cruising, but what they ought to have is a boat with a large cockpit. Men buy fast motor boats with large power, large gasoline consumption and scanty cabin accommodations, go cruising in them and wonder why their expenses are so high. So, Mr. would be buyer, decide what you're going to do with your boat and get the proper type for the service. Once this is settled a lot of the craft offered you will be eliminated and you can get down to brass tacks with the few that are left on your list.

No boat should be bought without an inspection out of the water, and a good time for this is when she is on the beach or in a shed for the winter.

First, go aboard and look over the general layout of the cabin. If it doesn't suit, or cannot be made to suit with slight alterations, there is little use in going farther with the examination. If a suit of clothes doesn't fit, you don't care how fine the cloth is. This first look below may be depressing, for a boat in winter quarters is dark and gloomy and cold with a chill that goes to your very marrow. So allow for the lack of light and warmth and try to visualize cheerful cushions on the bare transoms.

If the cabin arrangement suits, take a careful look over the outside, watching for any signs of weakness or strain. See whether the sheer line is fair or pulled up at the shrouds or runner plates. Look at the seams under the mast step and be suspicious of unfair lumps, wide seams or an unusual number of fastenings anywhere. All these are signs of undue strain or too light construction. Try the caulking here and there, particularly along the garboards, at the hood ends of the planking and in the butts. If the outside planking is cedar or yellow pine, moderately wide seams are not bad, if the boat has been out of water for some time, for these woods shrink when dry and swell when wet. She may leak a bit when she first goes overboard but will soon "take up." In such case, the seams will all be of uniform width. An extra wide one here and there is bad, and particularly so along the garboards. (Common brown soap in the seams just before she goes overboard will help keep her tight until her plank swells.) The caulking should be firm and in good condition. If you can get hold of a "tail" and pull it out, it is a bad sign. It is also bad if the caulking is soft or if it can be pushed through the seam easily.

Look around the rudder port and along the rabbet of the sternpost and about the stern bearing for wide seams. (This is one of the places that a wooden tugboat nearly always needs caulking, the vibration from the screw seems to jar the caulking loose.) Planking butts should be narrow; wide ones mean either careless workmanship or severe strain. Note also the condition of all outboard connections for piping. And beware of an outboard stuffing box on any but a davit boat for such a contraption cannot be repacked when the boat is afloat. The stern gland of any well regulated craft should be inboard where it can be got at without hauling out or going on the beach.

Another danger signal is the presence of a lot of tiny plugs, a quarter of an inch or less in diameter, scattered irregularly in a plank. These are "worm spiles" and mean that *teredo navalis*, the shipworm or borer, has been eating his way through the plank. These little tunnelers will often honeycomb a plank completely, leaving only a thin shell. They are not very bad in Northern waters, fortunately, but are one of the banes of the tropics. It is said that they never cross a seam but stay in the same plank in which they first feloniously entered. Examine the centerboard trunk, if there is one, with extra care, for it is not easy to repair if there is anything wrong there.

On deck, note the general condition. Is the deck still round or has it lost its crown and flattened out? Is the joint between deck and cabin trunk tight? Has the deck been scraped so often that each cleat and fitting sits up on a little island of wood? Are the plugs over the fastening all tight? Are there any little short pieces—"dutchmen," the builder calls them—in the deck and, if so, why? They denote a repair job and should be investigated. Look over the canvas on the top of the cabin trunk, particularly where it turns down over the side and at the corners around the companionway. See that the cockpit coaming is in good condition and makes a tight joint with the deck. If there is ice or a puddle of water standing anywhere on deck, there is apt to be a rotten spot under it.

Now go below again and, with flash lamp and pocket mirror (to look at the backs of things), go over her with a fine tooth comb, from one end to the other. See that every part of the structure fits closely. No self respecting builder uses a shim, a thin piece of wood used to fill a joint that is too wide. The planking seams on the inside should be tight and the plank should fit the frames closely. Clamp, shelf and stringers ought to fit tight on both edges and not stand away from frame or beam on one edge. (Here is where the pocket mirror comes in.) Bulkheads and other joiner work should fit well all around and joints in the joiner work ought to be "air tight." But there should be an opening above the ceiling, just under the beams, so that the space between plank and ceiling may be ventilated. Indeed, air should have access to all parts of a boat, for when any space is cut off and unventilated, dry rot is apt to start. Too often the space under the deck aft is unventilated and this is a place that should be examined with great care for incipient rot.

The mast partners, mast step and bitts must be looked over carefully for there is always a chance of excessive strain there. Luce records a case of a British sloop of war that started her garboards off by continual setting up of the rigging. She had new lower shrouds and her zealous first lieutenant, in keeping them taut, nearly shoved her masts through her bottom.

An examination of the bilges will give some idea of the care a boat has received. If the bilge is clean and sweet and the limbers clear, particularly under the engine, she has probably had a careful owner. If the bilge is dirty, limbers choked with trash and a thick mass of black grease lies under the motor, she has had poor care. While nosing around under the cabin floor it will pay to trace out the drain pipe from the ice box. It is sometimes led down into the bilge, discharging against the planking. Such a plan is faulty for decay starts under the end of the drain. While you're crawling around and sticking your knife in here and there looking for soft spots, look over the fastenings. Stout copper nails riveted over burrs are fine and galvanized iron is good, but beware of a mixture of the two and don't have any "black iron" fastenings in your boat. The strength and durability of a boat depends more on the quality and workmanship of her fastenings than on any other one thing. An old time builder's praise of a competent naval architect was: "He knows how to put two pieces of wood together."

Sometimes a boat will be perfectly tight when at anchor and will leak when under way. This may be only because her topside plank has dried out and the seams are open or she may be too lightly or poorly built and, consequently, will wring and open up when driven hard. In either case, she will have water slopping around in the bilge and it will leave traces on the frames and plank or on the backs of drawers or on locker fronts. It is not a good sign.

Go over the spars carefully, looking for signs of "springing," which will show up in a ragged, stepladder sort of disturbance of the grain. It means a weak spot and an untrustworthy stick. Sometimes the gaff jaws scratch the mast and the incautious owner fits a brass band around it where the chafe comes. Usually the mast rots under the band, so it is poor economy. The moral is: distrust a mast with such a band on it.

Look over the standing rigging, particularly at all eyes or where there is a nip. Open up the strands of the running rigging and see whether the inside has the nice bright yellow of new rope or the dull grayish brown of old. Have the sails spread out on a clean spot and look them over. Open up the strands of the bolt rope and see how it looks. You cannot, of course, get any idea of how the sails fit, but you can see their general condition and freedom from mildew.

And then comes the motor. If the boat is an auxiliary and was converted from an out and out sailing craft, the motor is likely to be tucked away in some out of the way corner, under the cockpit or in the galley. It may be almost inaccessible, which would make overhauling difficult, to say the least. If she was originally built as an auxiliary there has probably been more thought given to the location of the motor and it will be possible to take off a cylinder head without taking the yacht apart.

Of course, a motor may look perfectly good and not be a good buy. Sometimes one has plenty of trouble getting a new motor to start or, once started, to run continuously and smoothly. The manufacturer's name plate will naturally be of help. A well known name is an asset, while an unknown name may spell trouble, for there have been firms that made a few indifferent motors and then went out of existence. Suppose you had one of these motors and wanted a part for a repair job? Where would you get it? It would probably have to be made to order—and you know what that means in this day of dollar-an-hour mechanics. But if the engine was made by one of the long established, reputable firms of builders, you feel that it has a certain quality and you are reasonably sure of getting repair parts when needed.

In a motor boat the engine is the heart of the ship and should be examined with great care, but lack of space forbids further discussion this month.

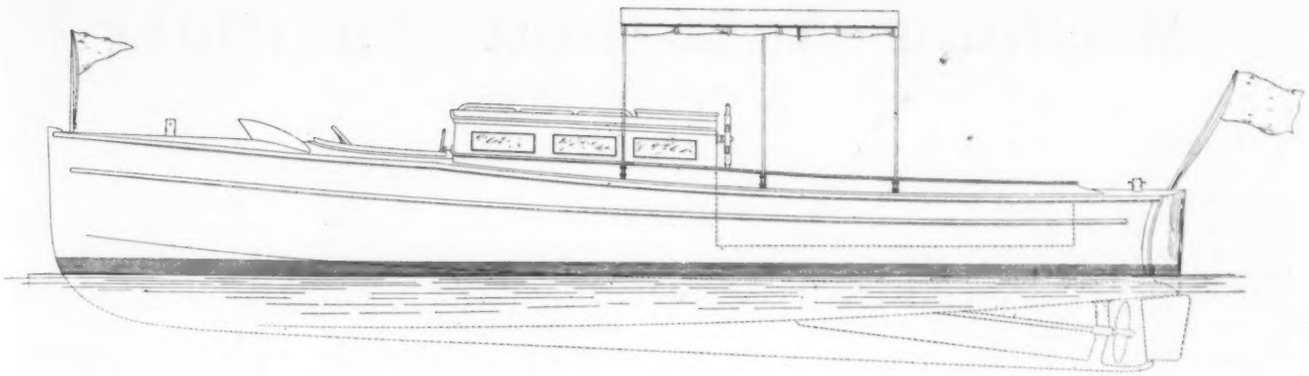
Warrior Sold to Spanish Yachtsman

BILBAO, Spain, will be the hailing port of the steam yacht *Warrior*, as she has been sold to Senor Francisco Yermo by Alexander Smith Cochran.

Warrior was built by the Ailsa Shipbuilding Co., at Troon, Scotland, in 1904, from designs by the late G. L. Watson. She is 282 feet water line, 238 feet over all, 32 feet 9 inches beam and 14 feet 3 inches draught. She was built for Frederick W. Vanderbilt who cruised in her extensively. In January, 1914, she went ashore off the coast of Colombia and was on the beach for some months. She was floated and brought to New York for repairs and sold to H. P. Whitney, who sold her to Alfred Gwynne Vanderbilt, who named her *Wayfarer*. After Mr. Vanderbilt's death on the *Lusitania*, she was bought by A. S. Cochran, owner of the *Vanitie*, and renamed *Warrior*. She and her owner were in the British naval service during the war.

For the U. S. N. R. F.

THE Navy Department has ordered that all Branch Hydrographic Offices be prepared to give free instructions in navigation to members of the Naval Reserve Force. The plans are not as yet thoroughly matured, but members of the Reserve may obtain information by communicating with the nearest Branch Hydrographic Office.



Shawnee III, a 30-foot Florida Boat

THE attractive day cruiser shown on this page was designed and built by William H. Hand of New Bedford for Addison G. Fay of New York. *Shawnee III*, as the new craft has been named, was shipped to Florida in December.

The boat is a clean lined craft of the familiar V-bottom type and is 30 feet long over all, 7 feet beam and 2 feet 7 inches draught. She is driven by a 6-cylinder motor which gives her a speed of about 20 miles per hour. The engine is installed amidships under a cabin which also houses a toilet. This cabin—top, sides and ends—is easily removable.

There are two cockpits and the boat may be controlled from either. The after cockpit is arranged for fishing and is provided with swivel chairs, placed aft, to accommodate three fishermen. The awning extends to the middle of after cockpit only, leaving ample room for the manipulation of fishing rods. The forward cockpit is designed to accommodate two passengers beside the helmsman, and is a dry comfortable compartment under all normal conditions. The seat has a back raked to the correct angle and the mahogany breakwater forward protects it from spray.

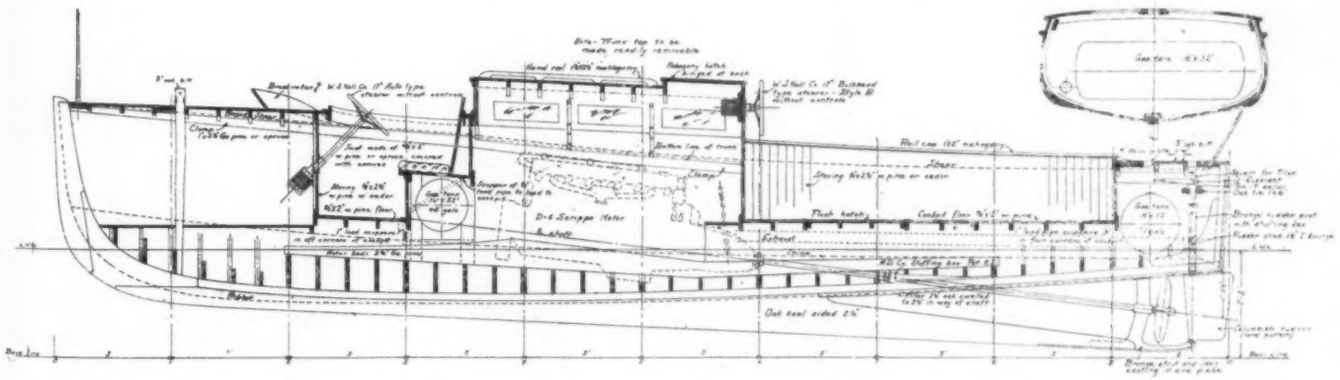
There are two gasolene tanks, one under the after deck and the other under the seat in the forward cockpit. Their combined capacity is 99 gallons, giving the boat a good cruising radius.

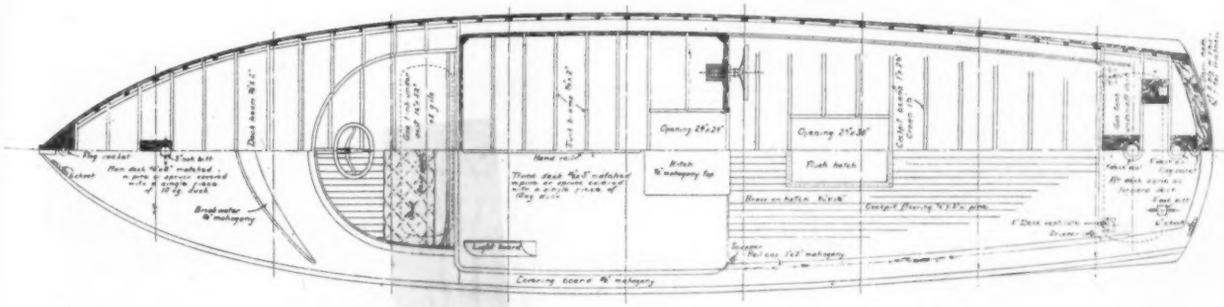
We have become so accustomed to the V-bottom type that we are apt to forget that it was introduced only eighteen years ago. V-bottom boats combine seaworthiness and speed. Their rounded topsides give them a good appearance while the angular chine is hardly apparent even when at rest in smooth water. Under way the chine practically disappears and we see a good looking boat hustling through—or rather over—the water.

Shawnee III is trimmed with mahogany which gives her those touches of color that add to a boat's appearance.

Converting M. L.'s to Peaceful Ways

A LARGE number of the British patrol boats, the well known M. L.'s, have been sold by the Admiralty and are being converted into pleasure craft. Many have been bought by a Southampton firm who are selling them at prices between 500 and 1,000 pounds. One is being fitted for trial with a kerosene vaporizer of a type adopted by the French Admiralty.





M'Chum—A 26-foot Auxiliary

By S. S. RABL

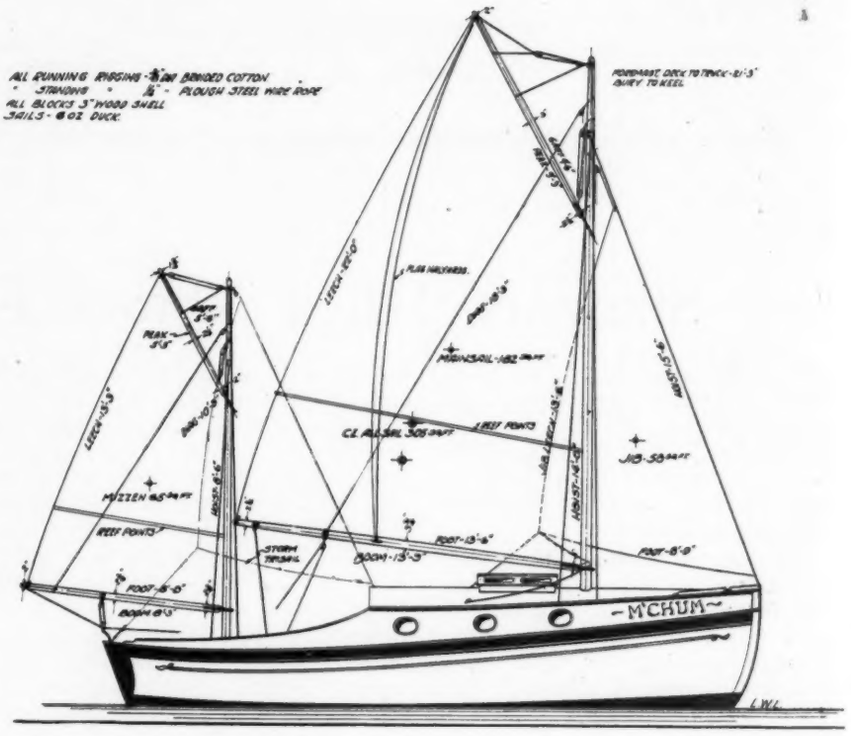
YACHTSMEN were formerly of two classes, the windjammers and the stinkpots: those who still adhered to sail and others who had discarded sails entirely for the puffy little gasoline engine which had a knack of getting them where they wanted to go despite calms and excessive blows.

The motorboat men soon realized that sails were pretty good when an engine refused to work and the sailors guiltily stowed a little kicker under their cockpit floors to tide them over the calms and to help them buck the head winds.

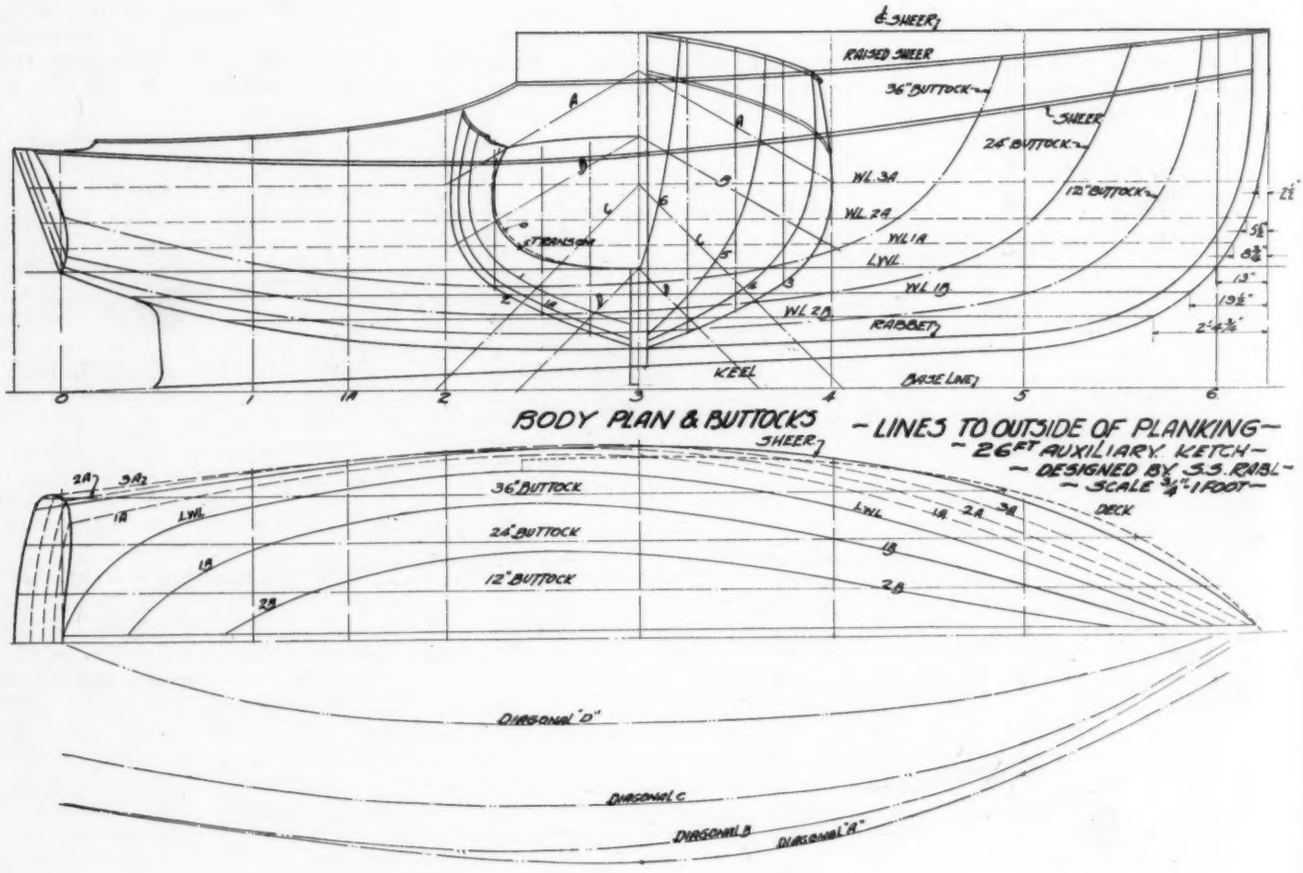
The popular boat of to-day is one that is a sailboat when the occasion arises and at the same time a motor boat of merit.

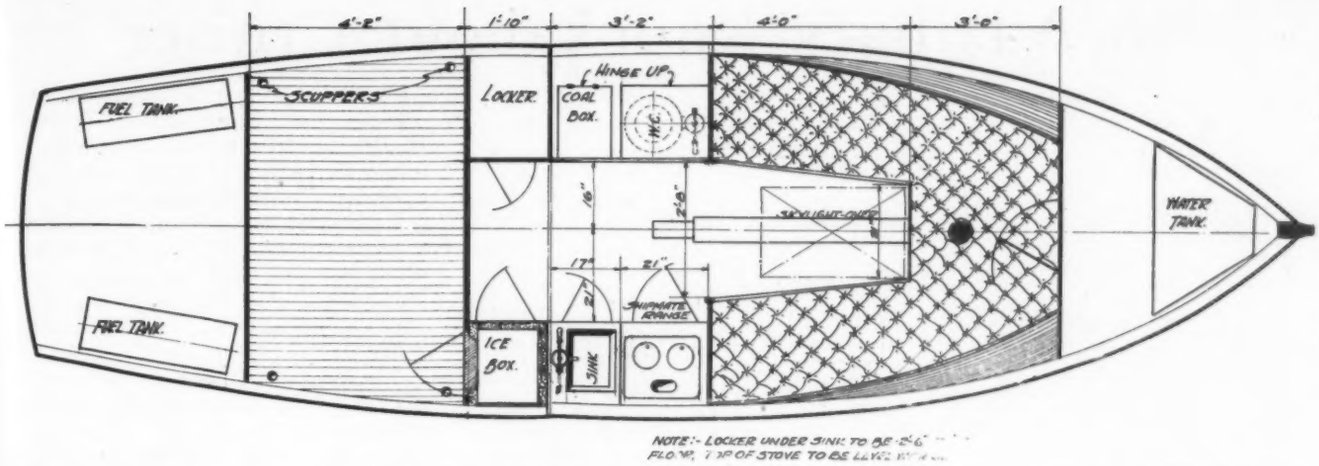
To meet this demand I have designed the little auxiliary shown in the accompanying plans, and, as she could well be anybody's chum, we will dub her *M'Chum*.

The lines show a boat which does not vary greatly from the practice of the modern small cruisers, yet there creeps into them a shape that surely has an affinity to sail. Her short overhangs are good for any sort of sea and the tumble home looks businesslike.


ALL RUNNING RIGGING - 3/4" BRAIDED COTTON
" STANDING " 1/2" - PLOUGH STEEL WIRE ROPE
ALL BLOCKS 3" WOOD SHELL
SAILS - 8 OZ DUCK
FOREPART DECK TO TRUCK - 8'-3" ABOVE KEEL
LEECH - 15'-0"
MAINSAIL - 182 SQ FT
C.E. MAINSAIL 305 SQ FT
REEF POINTS
JIB - 58 SQ FT
MIZZEN 65 SQ FT
STORM TRYSAIL
BOOM - 13'-3"
FOOT - 8'-9"
FOOT - 6'-6"
BOOM 8'-3"
-M'CHUM-
L.W.L.

Let's glance aloft at her rig. Surely there is no rig better adapted for this type of boat than the ketch. The sail is all kept very well inboard, a very necessary point in single handed work, and the centers of



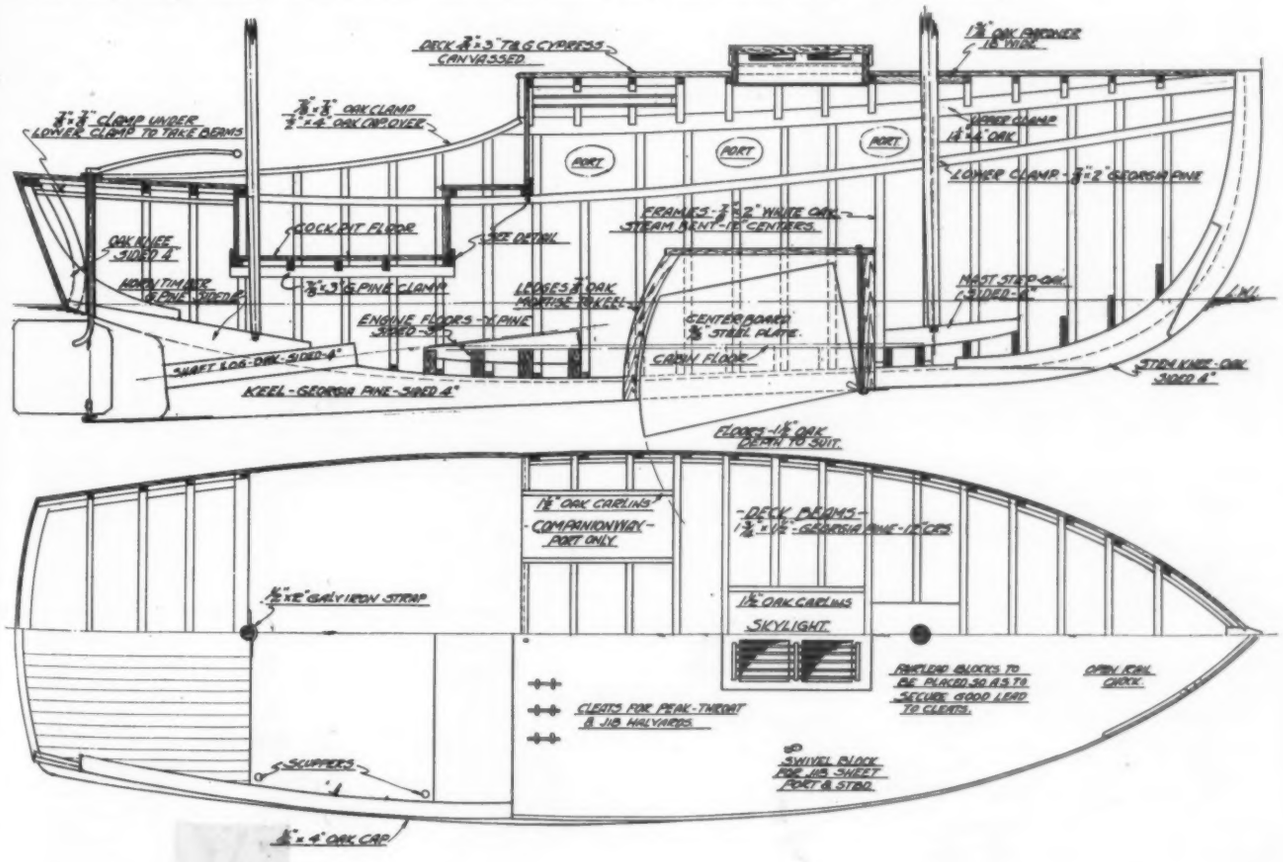


effort are pretty well grouped. All leads are brought within easy reach of the cockpit, making her very easy to handle. You will have noticed by this time that she carries a storm trysail and old Cap Wicker-chair over in the corner says he never heard of such a thing. Ask him if he was ever outside the capes. No? Well, tell him you've seen the seagoing tugs and trawlers with these things set and for the sole purpose of preventing an excessive roll when it started to kick up a fuss. *M'Chum* can work herself along very nicely under this sail and her jib and, when not in use, it can be easily stowed away. Snap hooks attach it to the halyards and cabin top where an eyebolt is placed to receive the hook.

The mate has probably been casting interested glances at the arrangement plan, so let's take her below and let her look around. On seeing the little Shipmate to starboard nothing can hold her from that side of the boat. Alcohol stoves and blue flame oil stoves are all O. K. in their place, (in a canoe going on a camping trip) but for real service give me a little coal stove that will make a cabin cozy and keep things dry. Read any story of any successful cruise and you will be convinced. The sink and lockers, under the ice box, the large stowage space up forward and last, but not least, the spacious transoms, are all things dear to a yachtsman. If you ask me if this is practical, I will answer "Yes," for I had in mind the arrangement of a boat which is no larger whose cabin is almost identical to this.

The construction plan is included for those who wish to build and the work is in no way complex. Strip planking was contemplated in the design and the frames are made flat for this purpose. An eight inch garboard strake should be fitted and the strip planking started from this. The sheerstrake and strakes above are also wide planks, giving a finished appearance if varnished. I have covered all other items on the plan itself and an amateur will find her in no way a hard boat to build.

I recommend an eight to ten H. P. motor to drive *M'Chum*, although any amount of power may be fitted up to twenty.



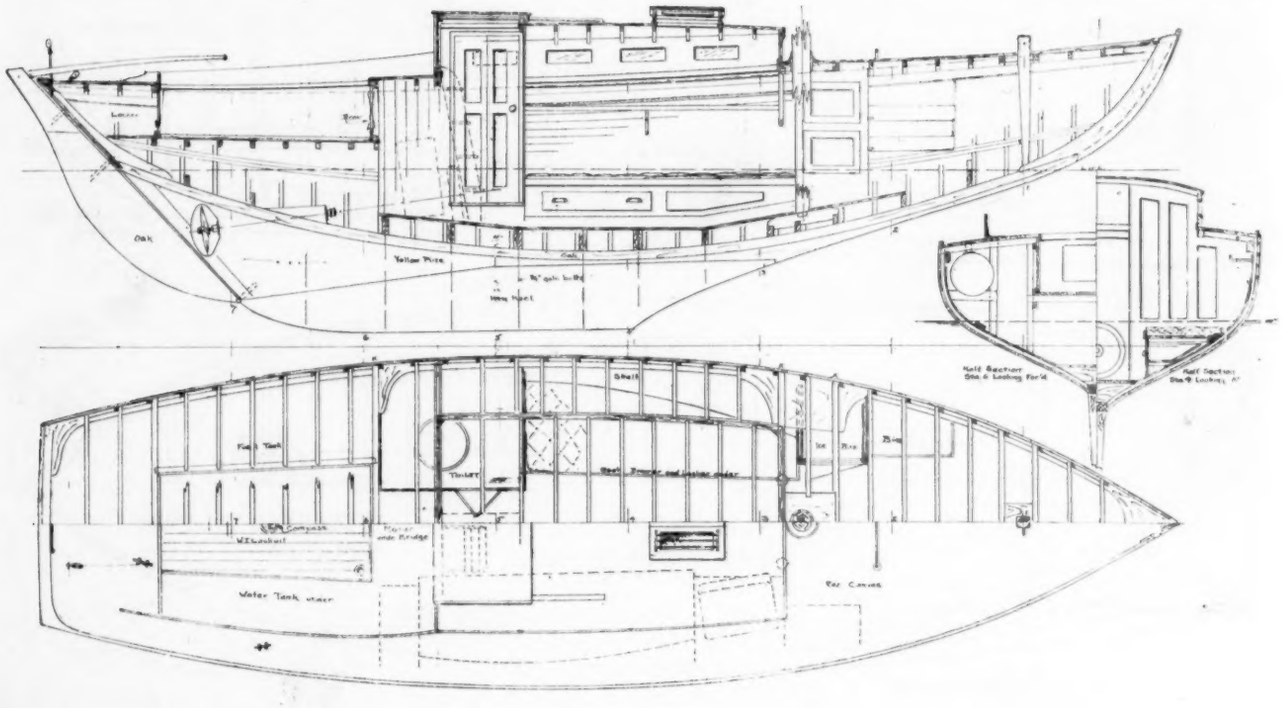
An Auxiliary Knockabout Cruiser

THE auxiliary knockabout on this page, designed by Samuel H. Brown of Annapolis, Md., should make an able and seaworthy little cruiser. She is 26 feet over all, 21 feet 3 inches on the water line, 7 feet 6 inches beam and 3 feet 8 inches draught. Her rig is snug, 425 square feet in all, and the main boom is short so that the sail is all well inboard and easy to reef.

The short overhang forward is in keeping with the square, raking transom and the rudder "outdoors." The boat should be smart under sail and easily handled by one man as jib sheets are in easy reach of the helmsman.

The cabin is laid out with a transom berth on each side and good stowage space for clothes. The toilet is on the port side aft and is completely enclosed. The ice box is forward on the port side and a feature that will appeal to all dyed in the wool cruisers is a Shipmate stove located forward on the starboard side. Tanks are under the deck aft, water to starboard and fuel to port. The watertight cockpit floor is high enough above the water line to be self bailing and the deck forms the seats.

A small motor, 4 or 5 H. P., is located under the bridge deck where it is out of the way and yet accessible by unshipping the companion ladder. This motor should drive the boat about 6 miles an hour in smooth water and the small aperture in the deadwood for the screw should affect her steering under sail only slightly.



A Boost for the Leg o' Mutton Rig

The special committee of the Great Lakes Yacht Racing Union makes its report

AT the last annual meeting of the Yacht Racing Union of the Great Lakes, a special committee was appointed to investigate the leg of mutton rig and report back to the Council of the Union. The committee consisted of Robert E. Power, Chairman, J. S. McMurray and George L. Weed. Their report follows:

"1. The Marconi Rig for sail yachts, as used on Massachusetts Bay last season, particularly in Universal Classes P and R, has proved eminently superior to the old gaff rig as far as speed is concerned. Evidence goes to show also that this Marconi rig is easy to handle and, once the shrouds are properly set up, there is little danger of losing the mast as has been stated by some of the yachtsmen on the lakes.

"2. The rig is faster and in many respects better than the gaff rig. There is a tremendous saving in weight aloft and the boat seems to handle more easily because the boom is shorter and the sail is all inboard, and further, there is no heavy gaff and rigging to carry away when jibing in a hard breeze.

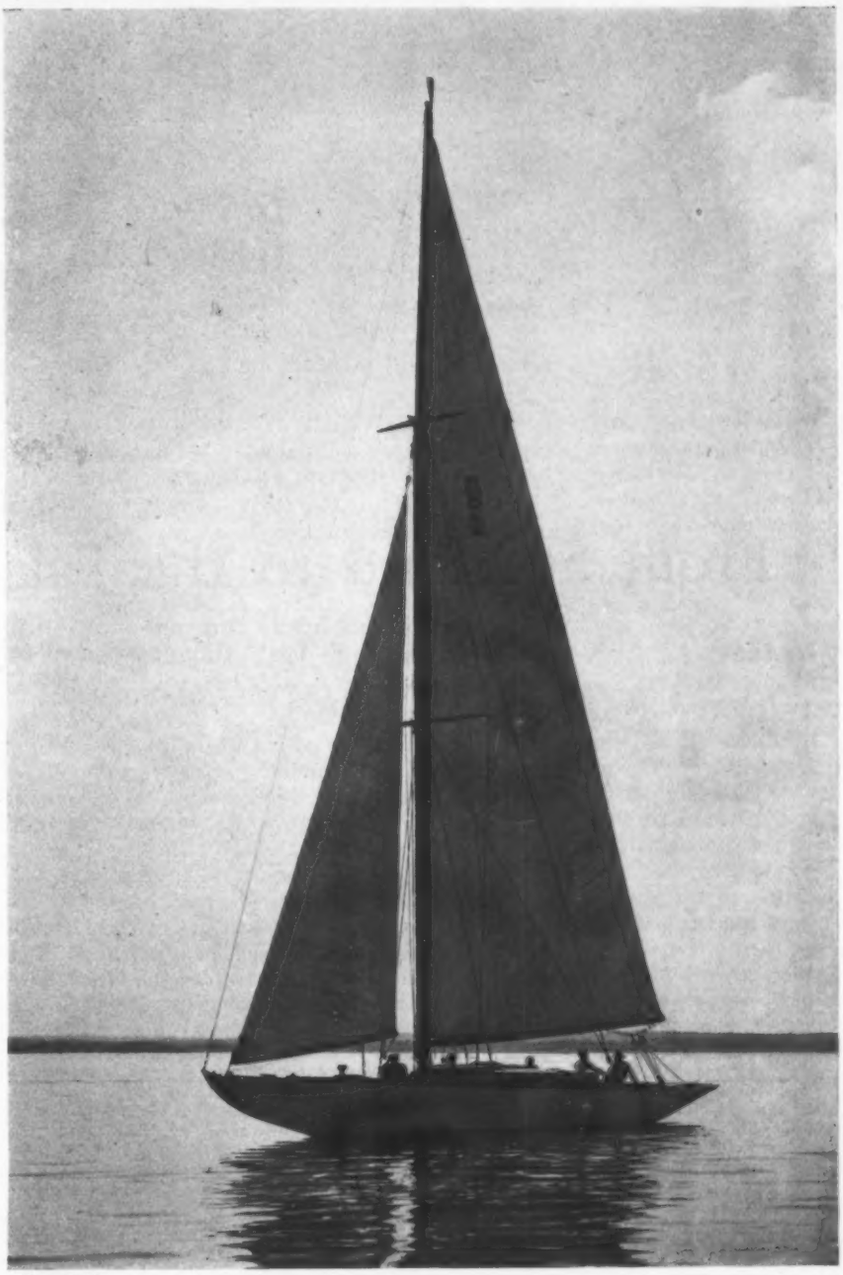
"3. The objections to the use of the Marconi rig seems to be, first, its cost; and second, the fact that it is in an experimental stage, and there is some talk of carrying the rig to extremes so far as height of the mast is concerned. Investigation shows that in a new boat the cost is very little more than the regulation gaff rig, but, of course, for existing boats a complete change has to be made from the deck up and no part of the old rig can be used. This fact has, of course, brought objections from owners of boats in the present Universal classes, particularly in Class R, but your Committee feels that these objections are of a character which can be overcome by the segregation of boats of the gaff rig from boats carrying the Marconi rig, if the interest of existing boat owners is sufficient to warrant it. Your committee does not feel that the rig should be barred merely because some expense would be involved in changing the rigs of the few existing boats.

"As a principle of yacht racing, the Marconi rig has more in favor of it than it has against it. It is a step in advance in the design and construction of racing yachts and we believe that the objectional feature now existing, that the rig has not become standardized and may be carried to extremes, will be eliminated in the near future as more use is made of it, and the possibilities are more definitely determined.

"Summing up the situation, the Committee recommends that no action be taken with reference to the Marconi rig, and that its development be left to the natural law of supply and demand.

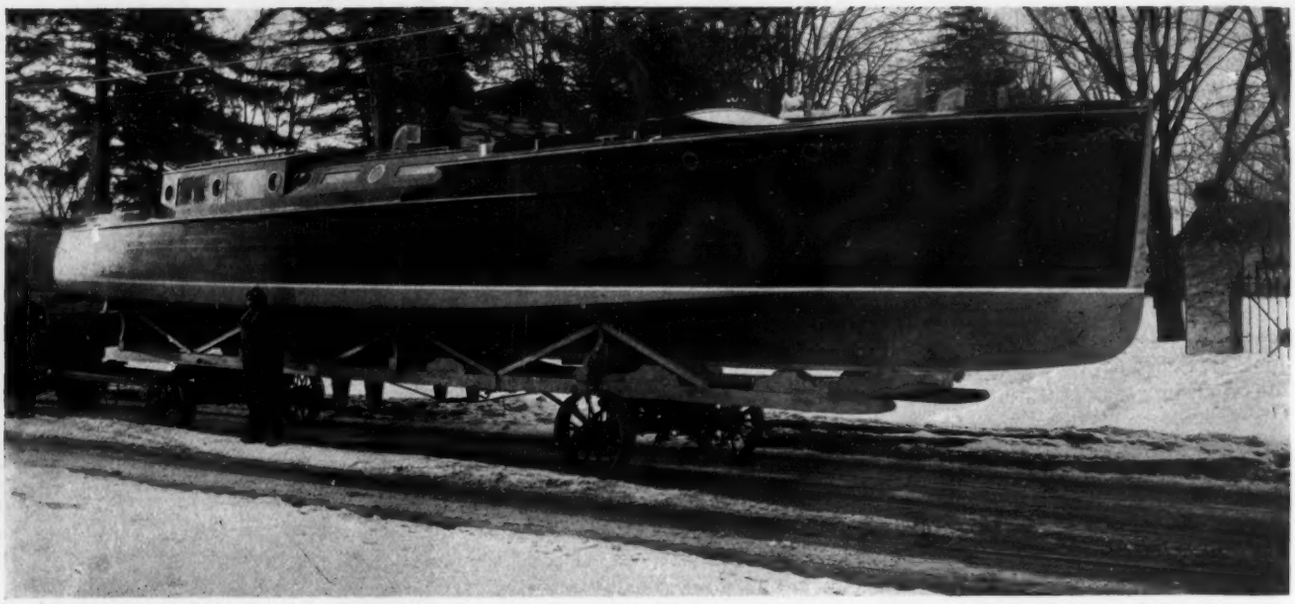
"We believe that the builder of a new boat in the Universal classes should have the right to experiment with the Marconi rig if he so desires, and strongly object to any step by the yachtsmen on the Lakes which would be looked upon as retrogressive, and which would serve to put our boats in a class inferior to those on the Eastern coast.

"We furthermore believe that should the development of the Marconi rig bring about extremes too radical for general use, that the Atlantic Coast Conference will take up the question and settle it, in which conference the Great Lakes always had a strong voice."



Rosenfeld

Varuna, one of the Larchmont O Class, has raced very successfully with her leg o' mutton rig. The double spreaders and the V backstays are clearly shown in this picture.



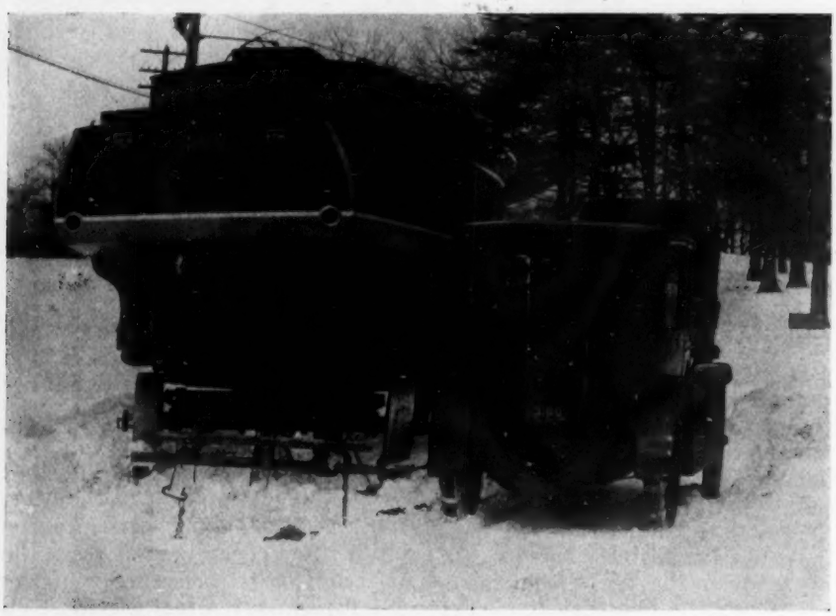
The Luders exhibit was a 50 foot mahogany and teak day boat with a speed of 35 miles an hour. A pair of 8-cylinder G.R. Sterlings drive her twin screws. Here she is on her cradle, ready for the strenuous voyage to New York

From Stamford to the Palace—Overland

Digging a way through snow and ice for a 50 foot mahogany day boat

By GILES MILBY

ONE of the problems of the exhibitor at the Motor Boat Show has been getting his exhibit from his works to the Show. Even in ordinary years this has not been too easy; the severe weather and crippled condition of transportation this winter has made it unusually difficult. The engine builder has rather a simple problem for he has a compact though heavy package. The boat-builder, however, must move a lightly built craft of considerable length, and at least part of the journey must be made on trucks. This means that clearances must be figured very carefully, for it would be embarrassing to have a show boat foul a bridge or crush her cabin top against the structure of the elevated railroad. The heavy snow that has clogged traffic in New York and stalled all sorts of vehicles in the suburbs has played hob with this matter of bridge clearances. Snow has drifted in under the bridges and frozen into glacial masses of ice that have seriously reduced the available space between street and bridge.



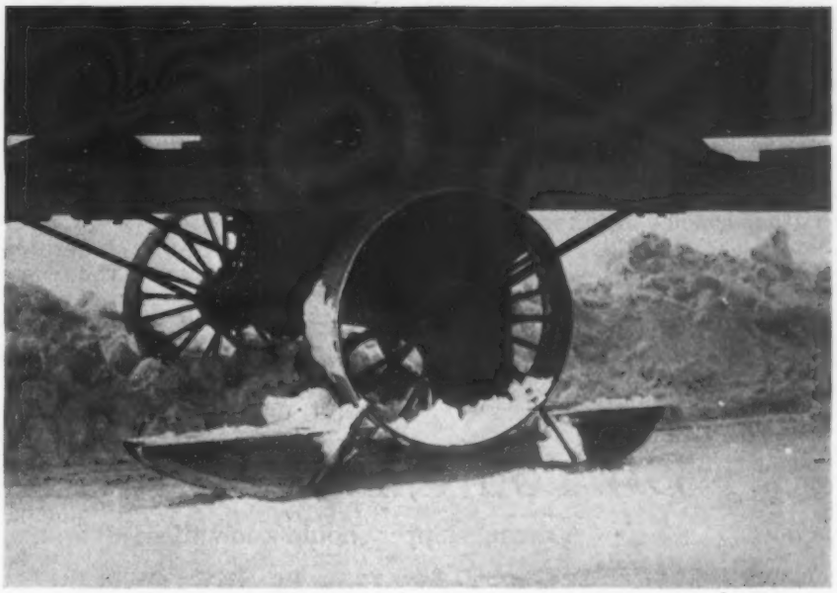
She took up a lot of the road, with her 10 feet beam, and even the most luxurious limousines looked small alongside her

The 50-foot day boat built by the Luders Marine Construction Company had an adventurous voyage on her way to the Show. Though Stamford is nearly 40 miles from New York, Mr. Luders has found it better to bring his show boats down on wheels than to cart them to the railroad and truck them again from the railroad to the Palace. Accordingly a cradle was built for the boat (the same cradle in which she rested at the Show) and was fitted with axles and broad tired wheels. Anticipating snow covered roads, runners were designed to fit the wheels. A day or two before the boat started for New York, Mr. Luders was chatting with a Canadian artillery officer and mentioned these runners, wondering if they would work. "Work," said the Canadian, "of course they will. That's the way we moved the big guns in France!"

The boat left her builder's yard at Stamford between 2 and 3 o'clock on the afternoon of Thursday, February 19th. Two motor trucks towed her and she jogged along at 5 or 6 miles an hour. By five o'clock Put's Hill in Greenwich, where Israel Putnam made his storied escape from the

British, was safely passed. Occasional detours had to be made where it was found that the snow had made bridge clearances too small for the boat to pass but she made good time until Portchester was reached. Then the trouble began. Icy streets, heavy snow drifts and unexpected detours caused so much trouble that it took six hours for the mile or so through the town. At one point the street sloped so that a chain fall had to be rigged from the boat to a telegraph pole to keep her from sliding off the street altogether. She passed through New Rochelle in the early morning and a well known engine builder reports that he was waked up by a terrific rumbling. He thought his conscience was troubling him but decided afterwards that it was the Luders boat.

The Show opened Friday evening and the boat was still miles from New York. Her builder followed her progress by calling up various points along the road. He would get some hostelry on the phone and ask if they had seen anything of a boat and would be told that a big boat and two seagoing motor trucks had just gone by, making a frightful racket. Many detours had to be made, and the boat had to be dug out frequently. Reports of progress kept coming in from various road houses, a fact that might have roused suspicion in former years, but the Volstead Act has changed all that.



Broad runners were fitted to the wheels of the cradle and were used after the boat was stalled in Pelham, when two powerful trucks had failed to move her on wheels

Finally the land cruiser got stuck near Pelham and refused to budge. The truckman, land pilot, or whatever he might be called, was afraid the boat would not be received at the Show so late, and came posting down to the Palace. He was assured that the boat would be received and went back to his shovelling gang. In the morning he got another truck, fitted the runners to the wheels of the boat's cradle and came merrily along with two trucks ahead pulling and another astern pushing. The boat reached the Palace just before midnight on Saturday and was hauled into her position. Sunday morning the shop gang turned up and put in 24 hours, giving her the finishing touches and removing the marks of her strenuous land voyage.

One wag who saw her on the way said: "Why bother with railroad or limousine. When you want to go to New York in winter, take to the Post Road in your motor boat."

The New York Motor Boat Show

An interesting exhibition, with something lacking

THIS year's New York Motor Boat Show, held in the Grand Central Palace from February 20th to 28th, was the fifteenth exhibition of the products of the National Association of Engine and Boat Manufacturers. There were the usual exhibits of high grade boats, engines, and accessories. The bad weather held up a number of the boats and engines, so that there were vacant spaces on the opening night which, however, were filled later.

The Show as a whole was both interesting and disappointing; interesting because of what was exhibited, disappointing because of what was missing. The average yachtsman is usually interested in looking over the other fellow's boat, particularly if she is different from his own. There were many good boats at the Show, built by firms that know what a boat should be, firms with a tradition of good boatbuilding. Such craft were a delight to inspect. Their fine lines, their careful construction, their piano-like finish and excellent power plants made them things of beauty. They promised speed and comfort in every line. They were the last word in motor boat luxury—and their prices were extremely high.

Then there were the imitations, the mahogany boats that were not well fastened, not well designed, poorly finished; craft whose useful life would be short, that would look old and battered in a season or two. Such boats we have always with us, a nuisance to their luckless owners.

At the end of the scale were the small fry, some well built, some thrown together. There were plain and honest power dories, sturdy boats without much pretense of style, but well built and with moderate power. Altogether good, wholesome craft. There were skiffs of good construction and with good lines—and there were fussy little round bottom dinghies that were thrown together, built of cheap lumber and only half fastened.

But, and here is one place that the show disappointed, there was a great and almost unfilled gap between the high grade, high speed, high priced teak or mahogany speeder and the humble dory. The average motor boat enthusiast, the average man on whom the sport depends—and on whom boatbuilder and engine manufacturer depend—looked almost in vain for the moderate sized, moderate priced, well built, sensible boat that appealed to him. There were a couple of cruisers there that answered this description, and their builders took a number of orders, but they were about the only fair sized boats that were within reach of the average pocket book.

To the casual observer, the key-

note of the show, as far as the boats went, was luxury. Can the Association, at its public appearance, make its appeal on that basis? True, these mahogany and brass fliers are spectacular, but they are for the few. The backbone of motor boating is the man with the real boat and the boatbuilders had little for him at the Show.

With the engine builders it was a different story. There were all varieties of motors, from the high speed racing engine to the canoe motor. The engine designers are getting more power, smoother and quieter running motors and refinement in design. There were few radical changes apparent and the general run of the motors shown was good. Fuel economy has been developed and also endurance, for to-day's engines are built to stand up. The racing engine is built to deliver its power all the way through a long, gruelling race. The express cruiser races over a hundred mile course now-a-days and her power plant must keep going at speed for the entire distance; the mile a minute hydroplane goes thirty miles or more and repeats the performance the next day.

Heavy, slow turning engines for the work boat were in evidence and were real jobs, with ample bearing surface and all the adjustments for taking up wear that a century of steam engine building has taught us. Interesting, also, were the new Diesels that appeared, though they seemed tremendously heavy alongside of gasoline motors.

It was a great show, but there was something lacking.

Do You Know All the Racing Rules?

A racing skipper should know them all and how they interlock

By GUY LOWELL

Mr. Lowell declined to write an article on the subject but gave permission to use his two letters and the accompanying diagram.—Editor

I AM afraid that there is little which I can say about the matter that would be of interest to your readers, because everything that needs to be said has been admirably set forth in the *Hand Book on American Yacht Racing Rules*, published some years ago by the Race Committee of the New York Yacht Club. It is my practice during the summer when I am sailing a racing yacht, to have the matter in that hand book at my fingers' ends, so that in an emergency I shall know exactly what the rule is. It seems to me that it is just there that many amateur yachtsmen, and for that matter some professional yachtsmen, fail. They have a thorough knowledge of some of the rules, but do not know them all, and therefore do not understand clearly how they interlock. There is no excuse for a protest ever occurring which involves a misunderstanding of the rules, yet they often do occur and involve a loss of the Race Committee's time in deciding the protest. When a man knows the rules thoroughly and knows that he has infringed upon them, he should retire voluntarily and not wait until he is protested.

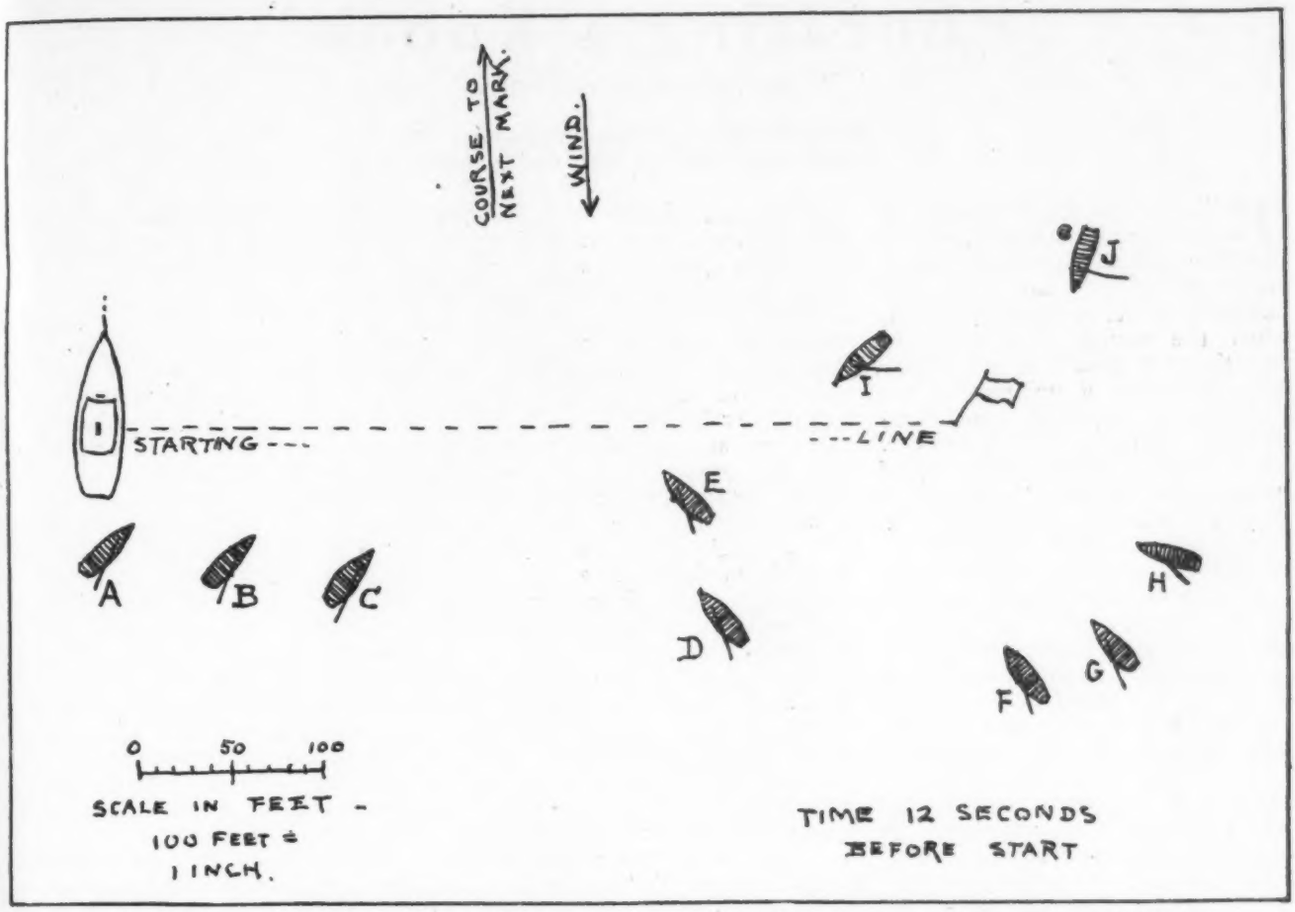
The other class of protests are due to a difference of opinion about the facts. These are, of course, much the hardest to decide, but before an experienced Regatta Committee is through with its cross-examination, it usually has the facts pretty well in hand.

I have raced in Massachusetts waters, in New York waters, in Buzzards' Bay and in Europe for a number of years and have in that time never once entered a protest against any one. I have in that time been protested perhaps some half dozen times by others and have only once been disqualified. In that race I tacked under the lee bow of a sloop on the starboard tack and backwinded her. As soon as it was clear that I was backwinding my competitor, he claimed that he would protest me, not because we had touched but because in his opinion I had come so near that a "*risk*" of touching was involved. What I did was risky and the fact that I succeeded because I did the job thoroughly did not excuse me, and as long as my competitor chose to protest me, it was quite clear that I ought to be disqualified. It was not a question of rule, but one of fact.

It seems to me that the young yachtsman too often regards the racing rules as a series of inhibitions on his right to the freedom of the seas, instead of as a framework on which to build up his system of racing strategy and tactics, for though, as Rule 2 says, "it shall be the duty of the regatta committee to discourage all attempts to win a race by other means than fair sailing and superior speed and skill" it is the rules which define what is fair sailing and how superior skill may be shown.

Yacht racing in a series of club races or in an international regatta is a competitive sport that deserves the same attention and careful preparatory training as other competitive sports. Yacht racing bears the same relation to an afternoon's sailing party as polo does to an afternoon's ride, or an intercollegiate hockey game does to a Sunday morning skate on the river. If one competes, one competes to win, to test one's skill, to try one's strength, to exercise one's intelligence and not to lose, to make stupid mistakes or to drift idly with the tide while others are making progress. Now the rules of the game are framed to convert an amusement like riding or skating or sailing into a competitive sport like polo or hockey or yacht racing. For the former simple amusements, the only rules required are those of courtesy and custom, among which is the rule of the road, whereas for the competitive sports the rules must define the terms of the competition. It is a thorough knowledge of the rules and of the tactics based on the rules, together with the special skill called for by the rules, that makes a good polo player out of a good horseman, a brilliant hockey player out of a fine skater, or a successful racing helmsman out of an able sailor.

Now yacht racing, like many other sports, involves the tactics of position; football, tennis, hockey, polo—all require, besides sheer speed, rules that permit skilful maneuvering for position, rules which define the conditions under which this maneuvering may be done. Fundamentally it makes very little difference what these rules are when once adopted, provided that all the competitors are given equal advantage and provided that the rules eliminate unnecessary danger and produce an interesting game for the player and the spectator alike. Proper rules do not spoil the game, they make it. So why not study the rules as a preparation to the season's racing before getting into a tight place? Why, in other words, consider them simply as a means of keeping one out of trouble during a race? Too many yachtsmen consider that they will



All boats have sufficient speed to cover 7½ feet per second until the starting gun, excepting that any boat which tacks loses 30 feet thereby. Boats cannot sail closer than 4 points from the wind. What is the course of each boat and what is the position of each boat at time of starting gun and 15 seconds after starting gun?

pick up these laws of racing during the racing season, that they will become skillful by observing and by experience, whereas actually a racing season consists at most of only some 30 races and the amount of practical training obtained in practice is small. So I would advocate studying the rules academically before actually going to the starting line and each season giving oneself a blackboard talk with the rules in hand, just as the football coach does to his team; knowing the answer to a question of right or wrong that occurs in a race from having worked it out beforehand. One can execute a necessary maneuver much more skillfully if one is not at the same time racking one's brain as to what the rule really is and one will at the same time often save that hard-working body, the regatta committee, a great deal of unnecessary trouble in deciding afterwards for the helmsman what he should really have known in advance.

At the naval colleges, before the war, they used, as part of the instruction in tactics, to play a game with small models that were maneuvered on a table. It was like a modified game of chess, but with additional controlling elements such as speed of motion, time for making moves, distances to be covered. This *kriegspiel*, as it was called, was considered excellent training for the grim business of actual warfare. The late Lorin F. Deland worked out on paper in advance that most spectacular of football plays, the flying wedge. Frederick W. Taylor, who did so much to advance the practice of industrial efficiency in large factories, originally conceived his ideas by working out fatigue-saving motions when he was a candidate for intercollegiate tennis honors.

I remember seeing a famous football coach who was playing for the racquet championship of America, while his competitor was replacing a broken racquet, take from his pocket a note book in which he had jotted down his plan of campaign and study it till his rival was ready to continue the game. These were all cases where the tactics of certain games involving speed and position were worked out and practiced academically in advance.

I am enclosing on another sheet a yacht racing problem which shows what I mean. It is not of my own invention and is of interest as showing the kind of problems that have actually occurred in racing. In this particular instance, unless every helmsman were to know the rules and apply them promptly, there would be a fine omelette at the start.

The rules are not intended to benumb one's creative faculties, but to stimulate them, and this plea therefore is not for the rules themselves, but for a knowledge of the rules as a means of promoting a fine skill and clean tactics in a splendid sport.

A British Defender

SIR E. MACKAY EDGAR, whom our motor boat men remember as having come here some years ago with the B. I. T. challengers, is building a hydroplane to defend the trophy. She is under construction at the yard of S. Saunders and Co., East Cowes.

A Correction

BEELZEBUB, tutelary deity of all printers, mixed up the types in our February issue. The draught of Mr. Alden's schooner is 7 feet 3 inches and not 17 feet. The beam of the yawl on page 55 is 9 feet 3 inches and not 6 feet.

The schooner is being built by F. F. Pendleton at Wiscasset, Maine, for Gilbert D. Maxwell of Montclair, N. J.

Locating a Knock

By STILLMAN TAYLOR

What all the improper engine noises mean and how to tell them apart

TO KEEP the motor in the pink of condition, it is essential that it should be well adjusted and properly lubricated at all times. As the maximum power can be secured only when the engine is running its smoothest, it should be self-evident that the matter of maintenance is a consideration of much importance. And so, when a knocking sound is heard above the steady and subdued pulsations of the motor some unit of the power plant is out of gear. The nature of the sound will often indicate the cause of the trouble.

The majority of knocks are most apparent at high speed, but occasionally, and particularly when the trouble makes itself known by a light tapping sound, the noise is also heard at low speed. Knocks may indicate a serious condition or prove merely a simple matter of adjustment, the setting up of a loose bolt or screw. In any case, the remedy should be promptly applied.

Overheating, and consequent pre-ignition, is doubtless the most common cause of knocking. It may arise from poor or incomplete circulation of the cooling water or from improper lubrication and the symptoms of this trouble are increased friction and marked falling off in power. If overheating is due to a failure of the water circulating system, an examination of the cylinder heads will make it plain. In fact, this particular trouble may be readily located since the knock invariably increases in all cylinders; at first it is hardly noticeable as a light tapping sound, which gradually increases to a clear rapid drumming. A clogged outboard strainer and a poorly working pump may be found.

Pre-ignition, like overheating, will cause knocking in all cylinders. If it is due to faulty timing, the knock should cease and the motor speed up a bit when the spark is retarded. However, if the knock is caused by heated deposits of carbon, the sound will cease when the motor is throttled down. To find out whether the motor is carbonized, simply throw off the switch. If the engine still fires, it is a clear case of carbonized cylinder or piston. The remedy is a good cleaning.

If the main or crankshaft bearings are not properly adjusted but have worked loose through wear, the knock will be more in the nature of a dull thump, increasing as the engine is speeded up. Loose connecting rod bearings will also cause the same kind of trouble, noticeably louder on the firing stroke. If there happens to be considerable play in the bottom end connecting rod bearings, the loud *thump-thump* cannot be mistaken.

A sharp knock within the cylinder generally indicates a loose piston or wrist pin, or that the split bushings of the top end of the connecting rod are considerably worn. If the sound appears to come from the crankcase, look for a badly lined up connecting rod, or for dirt in the crankshaft or connecting rod bearings.

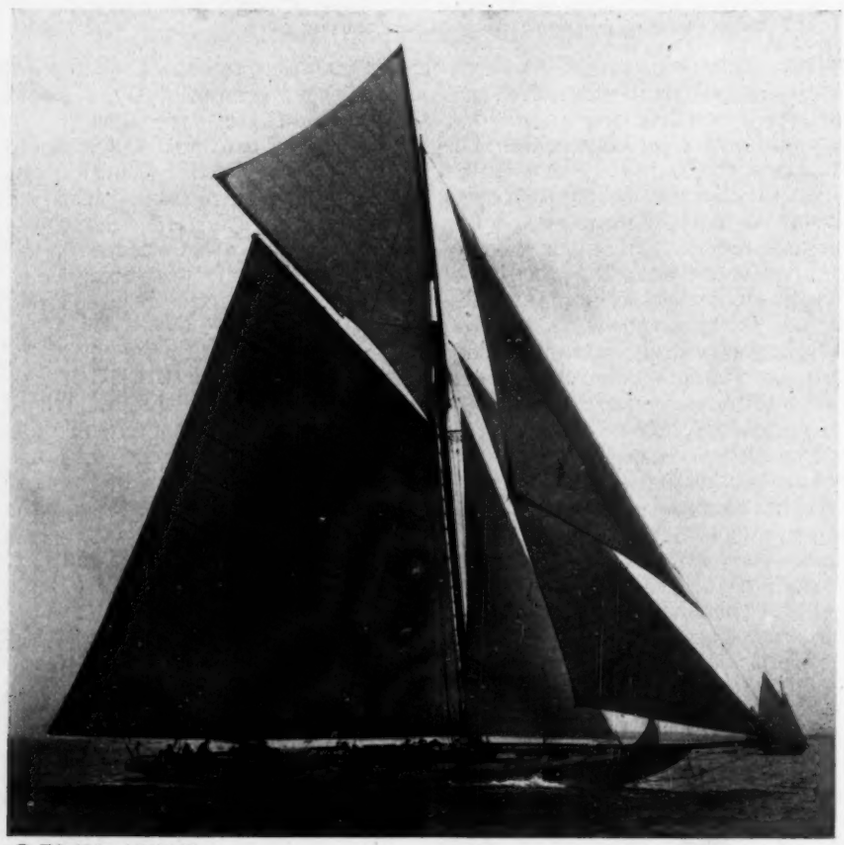
Perhaps one of the most puzzling knocks to locate is that caused by a poorly aligned or loose flywheel. This will set up a thumping sound, vibrating throughout the hull.

The sharp slapping of the valves is quickly recognized and is caused by too much clearance space between the valve stems and the push rods. Other valve troubles are caused by broken springs, a sprung or warped valve stem, or a broken or chipped valve head which fits its seat imperfectly.

If the timing gears work loose on their shafts they will set up a light knock, while the water or oil pump couplings will cause a steady tattoo, distinguished by the quick repetition of the sound. In the latter case the trouble is commonly due to the presence of grit in the moving parts; in less frequent instances it is due to improperly aligned driving gear.

Now and then the magneto is the cause of trouble from poor alignment of the driving shaft and its gears. A little grit in the distributor will set up a light tapping.

There are many causes to account for the various and unusual noises, but the boatman should not find it difficult to differentiate between the dull hollow knock issuing from the inside of the motor and the lighter noises caused by some outside moving part. Knocking always indicates that something is out of proper working condition and the trouble should be remedied at the first opportunity.

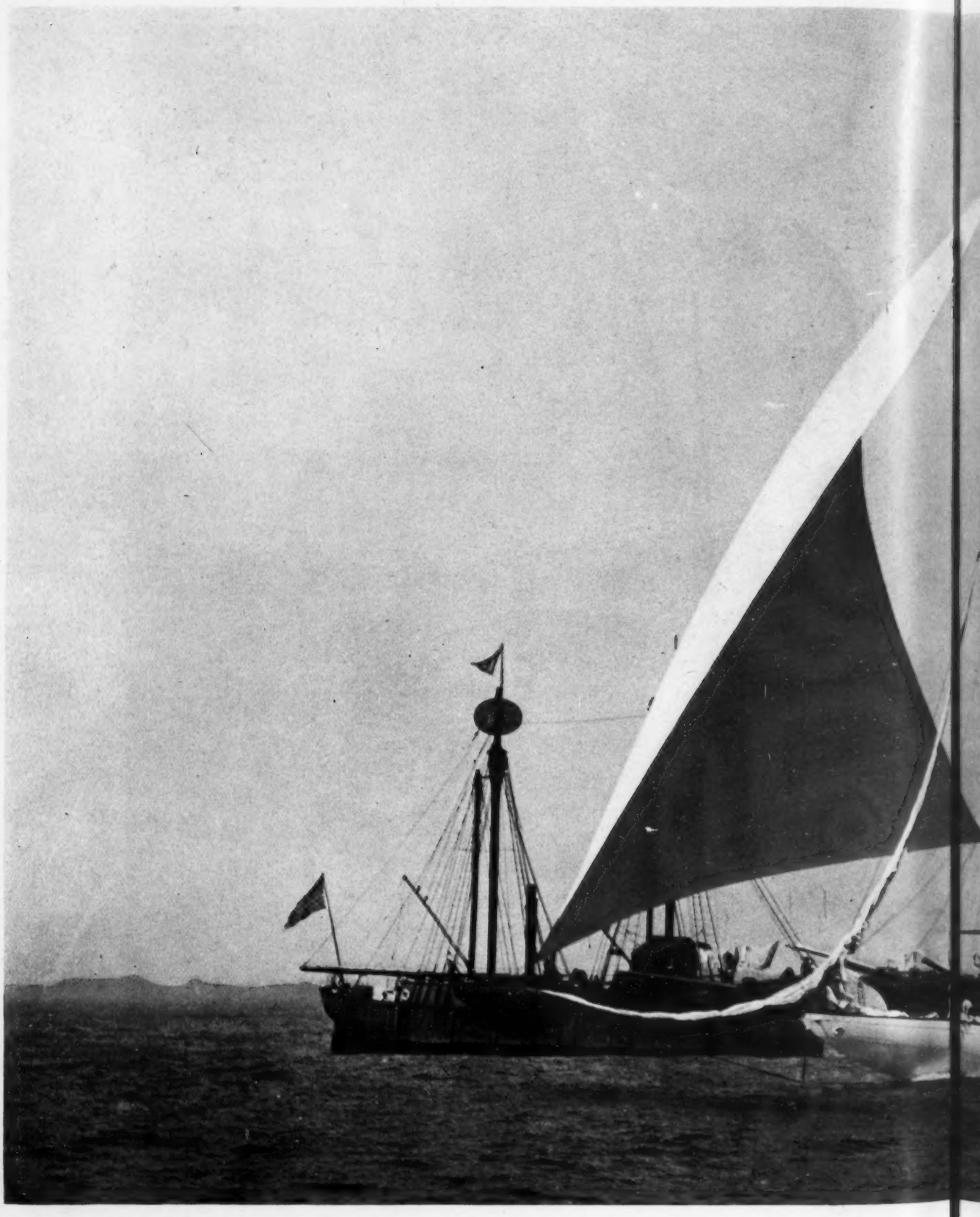


© Edwin Levick, N. Y.

Aurora, the old class K racing sloop, was built by Herreshoff in 1907 for Cornelius Vanderbilt. She had a model F. H. 6 cyl. 35-85 H. P. Sterling motor installed recently. Last month's disastrous fire at City Island practically destroyed her.

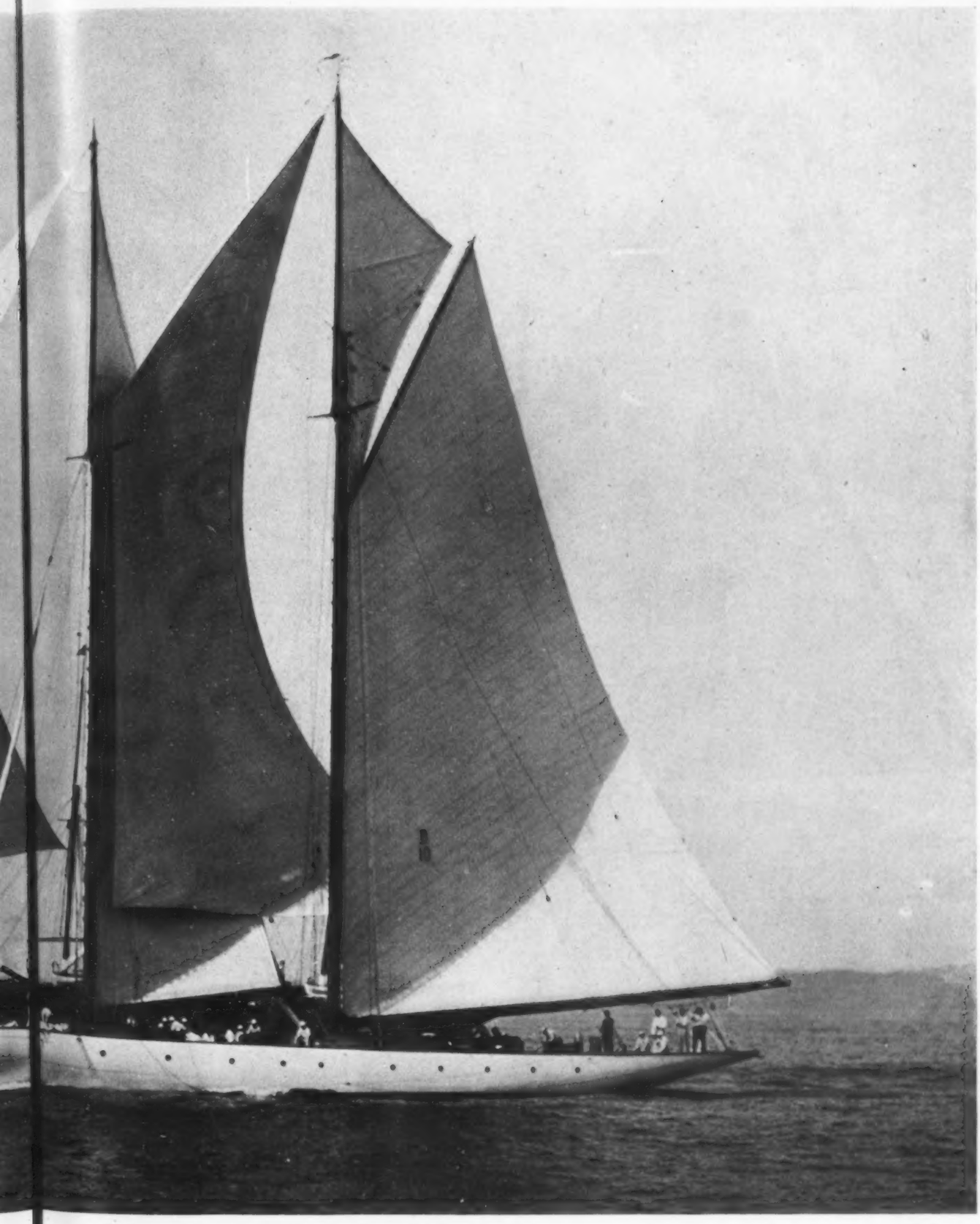
Bolles

Back in the nineties H. M. Crosby — yes, he was from Cape Cod, of course — had a boat shop in South Brooklyn and built there some real Cape Cats. One of them was the Step Lively. She was 25 feet water line, 34 feet 6 inches over all, 12 feet 2 inches beam and 23 inches draught. She could ghost along in the lightest air and was no slouch in a breeze. People went cruising in boats like this, though they were hardly ideal for cruising with their enormous sails and were uneasy at anchor. One that we cruised in would range round and round her anchor like a bull calf around a picket.



Bolles

Racing big schooner yachts is the sport of kings—and in these days requires at least
steel schooner, 87 feet water line, 127 feet over all, 24 feet 3 inches beam and 14 feet
share of prizes. She raced abroad, handled by the famous Charlie Barr, and did well
a law unto himself and regatta committees were under his thumb. Wilhelm would
down. He would also have the course changed during a race and scuttle home a win



t least ncely income. Here is Ingomar, a creation of the "Wizard of Bristol." She is a
4 feet hes draught. She was built in 1903 for the late Morton F. Plant and has won her
d well nglish waters. In Germany, however, it was a different story, for the ex-kaiser was
ould t he right of way when on the port tack — until Barr finally threatened to run him
a winn It was due to Barr's experience with Ingomar that Westward was built as she was.

Bolles

One of the best known rule beaters was the Dragoon, built in 1895 for the "special 34-foot class." There were numerous restrictions in the measurement rules for these boats, all intended to insure a deep bodied craft with good cabin accommodations, and that was the type of boat the other designers built. But T. R. Webber of New Rochelle found the loopholes in the rating rule and turned out a big, high sided brute that could sail circles around the rest of the class. In a breeze she would roll down on that long bilge of hers—and how she could go!

The Foam Discovers Iceland

A voyage to the Arctic in an 85-ton schooner yacht.
From Lord Dufferin's "Letters from High Latitudes"

Reykjavik, Iceland, June 21, 1856.

WE have landed in Thule! We anchored in Reykjavik harbour this afternoon (Saturday). H. M. S. *Coquette* sails for England on Monday, so that within a week you will get this.

For the last days we have been leading the life of the "Flying Dutchman." Never do I remember to have had such a dusting; foul winds, gales, and calms—or rather breathing spaces, which the gale took occasionally to muster up fresh energies for a blow—with a heavy head sea that prevented our sailing even when we got a slant. On the afternoon of the day we quitted Stornaway, I got a notion how it was going to be; the sun went angrily down behind a bank of solid gray cloud and by the time we were up with the Butt of Lewis, the whole sky was in tatters and the mercury nowhere, with a heavy swell from the northwest.

As, two years before, I had spent a week in trying to beat through the Roost of Sumburgh under double-reefed trysails, I was at home in the weather and, guessing we were in for it, sent down the topmasts, stowed the boats inboard, handed the foresail, rove the ridge ropes and reefed all down. By midnight it blew a gale, which continued without intermission until the day we sighted Iceland; sometimes increasing to a hurricane, but broken now and then by sudden lulls, which used to leave us for a couple of hours at a time tumbling about on the top of the great Atlantic rollers—or Spanish waves, as they are called—until I thought the ship would roll the masts out of her. Why they should be called Spanish waves, no one seems to know; but I had always heard the seas were heavier here than in any other part of the world, and certainly they did not belie their character. The little ship behaved beautifully, and many a vessel twice her size would have been less comfortable. Indeed, few people can have any notion of the coziness of a yacht's cabin under such circumstances. After having remained for several hours on deck, in the presence of the tempest, peering through the darkness at those black liquid walls of water mounting above you in ceaseless agitation, or tumbling over in cataracts of gleaming foam, the wind roaring through the rigging, timbers creaking as if the ship would break its heart, the spray and rain beating in your face, everything around in tumult, suddenly to descend into the quiet of a snug, well-lighted, little cabin, with the firelight dancing on the white rosebud chintz, the well-furnished bookshelves and all the innumerable knick-knacks that decorate its walls, everything about you as bright and fresh as a lady's boudoir in Mayfair, the certainty of being a good three hundred miles from any troublesome shore, all combine to inspire a feeling of comfort and security difficult to describe.

These pleasures, indeed, for the first days of our voyage, the Icelander had pretty much to himself. I was laid up with a severe bout of illness I had long felt coming on, and Fitz was seasick. I must say, however, I never saw any one behave with more pluck and resolution. Though himself almost prostrate, he looked after me as indefatigably as if he had already found his sea legs and, sitting down on the cabin floor, with a basin on one side of him and a pestle and mortar on the other, used to manufacture my pills, between the paroxysms of his malady, with a decorous pertinacity that could not be too much admired.

Strangely enough, too, his state of unhappiness lasted a few days longer than the eight and forty hours which are generally sufficient to set people on their feet again. I tried to console him by representing what an occasion it was for observing the phenomena of seasickness from a scientific point of view; and I must say he set to work most conscientiously to discover some remedy. Brandy, prussic acid, opium, champagne, ginger, mutton chops, and tumblers of salt water, were successively tried unsuccessfully. Indeed, at one time we thought he would never get over it and the following conversation, which I overheard one morning between him and my servant, did not brighten his hopes of recovery.

This person's name is Wilson, and of all men I ever met he is the most desponding. Whatever is to be done, he is sure to see a lion in the path. Life, in his eyes, is a perpetual filling of leaky buckets, and a rolling of stones up hill. He is amazed when the bucket holds water, or the stone perches on the summit. He professes but a limited belief in his star and success with him is almost a disappointment. His countenance corresponds with the prevailing character of his thoughts; always hopeless'y chapfallen, his voice is as of the tomb. He brushes my clothes, lays the cloth, opens the champagne, with the air of one advancing to his execution. I have never seen him smile but once, when he came to report to me that a sea had nearly swept his colleague, the steward, overboard. The son of a gardner at Chiswick, he first took to horticulture, then emigrated as a settler to the Cape and finally served as a steward on board an Australian steam packet.

Thinking to draw consolation from his professional experiences, I heard Fitz's voice, now very weak, say in a tone of coaxing cheerfulness:—

"Well, Wilson, I suppose this kind of thing does not last long?"

The Voice, as of the tomb: "I don't know, Sir."

Fitz: "But you must have often seen passengers sick."

The Voice: "Often, Sir; *very* sick."

Fitz: "Well, and on an average, how soon did they recover?"

The Voice: "Some of them didn't recover, Sir."

Fitz: "Well, but those that did?"

The Voice: "I know'd a clergyman and his wife as were ill all the voyage; five months, Sir."

Fitz (Quite silent).

The Voice; now become sepulchral: "They sometimes dies, Sir."

Fitz: "Ugh!"

Shortly after this, a very melancholy occurrence took place. I had observed, for some days past, as we proceeded north and the nights became shorter, that the cock we shipped at Stornaway had become quite bewildered on the subject of that meteorological phenomenon called the Dawn of Day. In fact, I doubt whether he ever slept for more than five minutes at a stretch without waking up in a state of nervous agitation, lest it should be cock-crow. At last, when night ceased altogether, his constitution could no longer stand the shock. He crowed once or twice sarcastically, then went melancholy mad; finally, taking a calenture, he cackled lowly, (probably of green fields), and, leaping overboard, drowned himself. The mysterious manner in which every day a fresh member of his harem used to disappear, may also have preyed upon his spirits.

At last, on the morning of the eighth day, we began to look out for

land. The weather had greatly improved during the night; and, for the first time since leaving the Hebrides, the sun had got the better of the clouds and driven them in confusion before his face. The sea, losing its dead leaden color, had become quite crisp and burnished, darkling into a deep sapphire blue against the horizon; beyond which, about nine o'clock, there suddenly shot up towards the zenith a pale gold aureole, such as precedes the appearance of the good fairy at a pantomime farce; then, gradually lifting its huge back above the water, rose a silver pyramid of snow, which I knew must be the cone of an ice mountain, miles away in the interior of the island. From the moment we got hold of the land, our cruise, as you may suppose, doubled in interest. Unfortunately however, the fair morning did not keep its promise; about one o'clock, the glittering mountain vanished in mist; the sky again became like an inverted pewter cup, and we had to return for two more days to our old practice of threshing to windward. So provoked was I at this relapse of the weather that, perceiving a whale blowing *convenient*, I could not help suggesting to Sigurdr, son of Jonas, that it was an occasion for observing the traditions of his family, but he excused himself on the plea of their having become obsolete.

The mountain we had seen in the morning was the southeast extremity of the island, the very landfall made by one of its first discoverers. This gentleman, not having a compass, (he lived about A. D. 864), nor knowing exactly where the land lay, took on board with him, at starting, three consecrated ravens—as an M.P. would take three well-trained pointers to his moor. Having sailed a certain distance, he let loose one, which flew back; by this he judged he had not got half way. Proceeding onwards, he loosed the second which, after circling in the air for some minutes in apparent uncertainty, also made off home as though it still remained a nice point which were the shorter course toward *terra firma*. But the third, on obtaining his liberty a few days later, flew forward, and, by following the direction in which he had disappeared, Rabna Floki, or Floki of the Ravens, as he came to be called, triumphantly made the land.

Sigurdr having scouted the idea of acting Iphigenia, there was nothing for it but steadily to beat over the remaining hundred and fifty miles, which still separated us from Cape Reikianess. After going for two days hard at it, and sighting the Westmann Islands, we ran plump into a fog and lay to. In a few hours, however, it cleared up into a lovely sunny day, with a warm summer breeze just rippling up the water. Before us lay the long wished-for Cape, with the Mealsack—a queer stump of basalt, that flops up out of the sea fifteen miles southwest of Cape Reikianess, its flat top white with guano, like the mouth of a bag of flour—five miles on our port bow; and seldom have I remembered a pleasanter four-and-twenty hours than those spent stealing up along the gnarled and crumpled lava flat that forms the western coast of Gulbrand Syssel.

The panorama of the bay of Faxa Fiord is magnificent,—with a width of fifty miles from horn to horn, the one running down into a rocky ridge of pumice, the other towering to the height of five thousand feet in a pyramid of eternal snow, while round the intervening semicircle crowd the peaks of a hundred noble mountains. As you approach the shore, you are very much reminded of the west coast of Scotland, except that everything is more *intense*, the atmosphere clearer, the light more vivid, the air more bracing, the hills steeper, loftier, more tormented, as the French say, and more gaunt; while, between their base and the sea, stretches a dirty greenish slope, patched with houses, which themselves, both roof and walls, are of a mouldy green as if some long-since inhabited country had been fished up out of the bottom of the sea.

The effects of light and shadow are the purest I ever saw, the contrasts of colour most astonishing, one square front of a mountain jutting out in a blaze of gold against the flank of another, dyed of the darkest purple, while up against the azure sky beyond rise peaks of glittering snow and ice. The snow, however, beyond serving as an ornamental fringe to the distance, plays but a very poor part of this season of the year in Iceland. While I write, the thermometer is about 70°. Last night we remained playing at chess on deck till bedtime, without thinking of calling for coats, and my people live in their shirt sleeves and—astonishment at the climate.

Remember me to ——, and tell her she looks too lovely; her face has become of a beautiful bright green, a complexion which her golden crown sets off to the greatest advantage. I wish she could have seen, as we sped across, how passionately the waves of the Atlantic flung their liquid arms about her neck, and how proudly she broke through their embraces, leaving them far behind, moaning and lamenting.

Reykjavik, July 7, 1856.

DURING our expedition to the interior, the harbour of Reykjavik had become populous with new arrivals. First of all, there was my old friend, the *Reine Hortense*, the Emperor's yacht, a magnificent screw corvette of 1,100 tons. I had last parted with her three years ago in the Baltic, after she had towed me for 80 miles on our way from Bomarsund to Stockholm. Then there were two English screw steamers, of about 700 tons each, taken up by the French Government as tenders to the yacht; not to mention a Spanish brig, and one or two other foreigners, which together with the frigate, the barque, and the vessels we had found here on our first arrival, made the usually deserted bay look quite lively. Until this year, no steamers had ever cockneyfied its secluded waters.

This morning, directly after breakfast, I went on board the *Reine Hortense* to pay my respects to Prince Napoleon; and H. I. H. has just done me the honor of coming to inspect the *Foam*. When I was first presented to him at the geysers, he asked me what my plans might be, and on my mentioning my resolution of sailing to the north, he most kindly proposed that I should come with him west to Greenland instead. My anxiety however, to reach, if it were possible, Jan Mayen and Spitzbergen, prevented my accepting this most tempting offer; but in the meantime H. I. H. has, it seems, himself determined to come to Jan Mayen and he is kind enough to say that if I can get ready for a start by six o'clock to-morrow morning, the *Reine Hortense* shall take me in tow. To profit by the proposal would of course entail the giving up my plan of riding across the interior of Iceland, which I should be very loth to do; at the same time, the season is so far advanced, the mischances of our first start from England have thrown us so far behind in our programme, that it would seem almost a pity to neglect such an opportunity of overrunning the time that has been lost; and after all, these Polar islands, which so few have visited, are what I am chiefly bent on seeing. Before I close this letter the thing will have been settled one way or another; for I am to have the honour of dining with the Prince this evening, and between this and then I shall have made up my mind. After dinner there is to be a ball on board the frigate, to which all the rank, fashion, and beauty of Reykjavik have been invited.

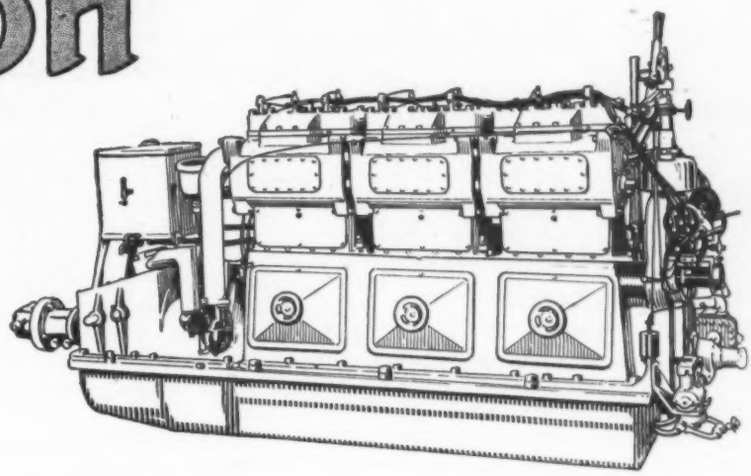
* * *

I give up seeing the rest of Iceland, and go north at once. It has cost me a struggle to come to this conclusion, but on the whole I think it will be better. Ten to fifteen days of summer-time become very precious in these

(Continued on page 133)

Winton

GASOLINE
MARINE
ENGINES



"The liner she's a lady"

That was Kipling's way of putting it, and a great many people carry the idea still farther and think a yacht's a matinee girl—good to look at, and all that, but not so hardy after all.

Yet the liner works harder and lasts longer than most men o' war, and there's many a yacht that outspeeds and outlives the plodding work boat.

What sturdy engines the big yachts require! And what play those engines would make of a work boat's task!

Just give that a serious thought.

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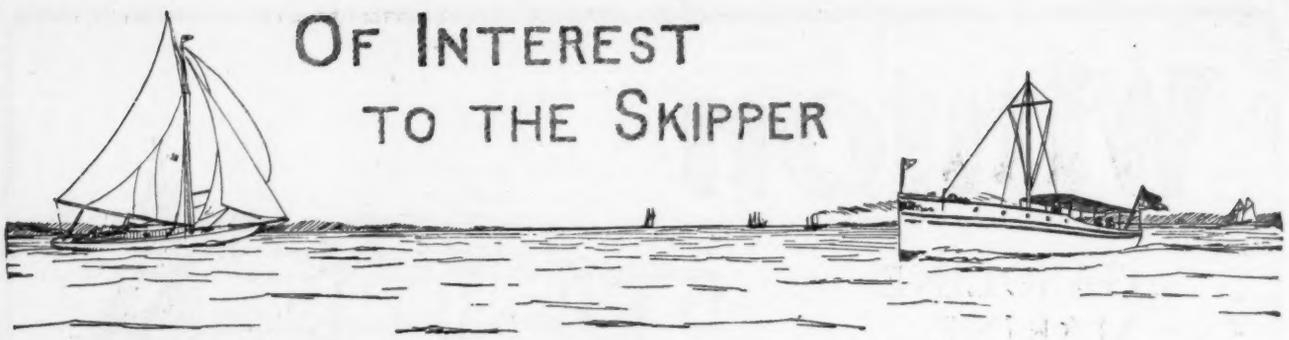


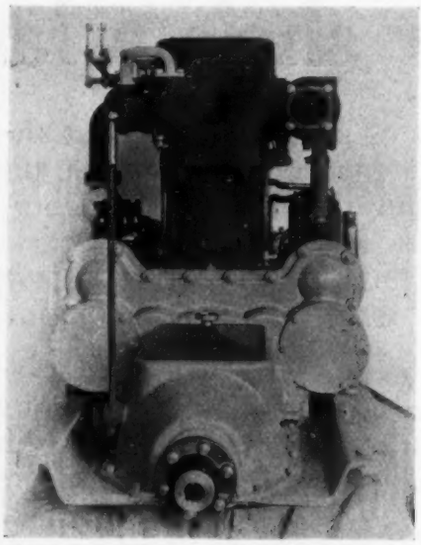
A New Dual-Valve-in-the-Head Sterling

THE Sterling Engine Company announces a new dual valve motor, the model GR, a high speed development of the model F to which has been added detachable cylinder heads with overhead dual inlet and dual exhaust valves. The new type is built primarily for express cruisers and fast runabouts and is not a light weight motor but a machine built for consistent power and endurance. The weight will average between 8 and 9 pounds per horse power.

The GR engines have a bore of 5¾ inches and a stroke of 6¾ inches and are built in 4, 6 and 8-cylinder units developing over 150, 225 and 300 H.P. at 1500 revolutions.

The most pronounced departure of the GR series from the usual is the employment of two intake and two exhaust valves in a cylinder of the overhead type, and the location of these valves in a detachable cylinder head. The dual valve feature, having been employed the past season by several prominent motor car manufacturers, needs no introduction. The Sterling Company has had ample experience with a dual valve engine, having five years ago placed on the market the dual valve model F 300 H. P. motor, and having also produced a number of 6 and 8-cylinder motors with 5½ inch bore and of the dual valve type. During the war they held the American rights to manufacture the British Sunbeam aeroplane engine which they built and developed for the United States Government. Likewise, the overhead valve design is not new in a Sterling, having been incorporated in the Sterling racing engines for several years.

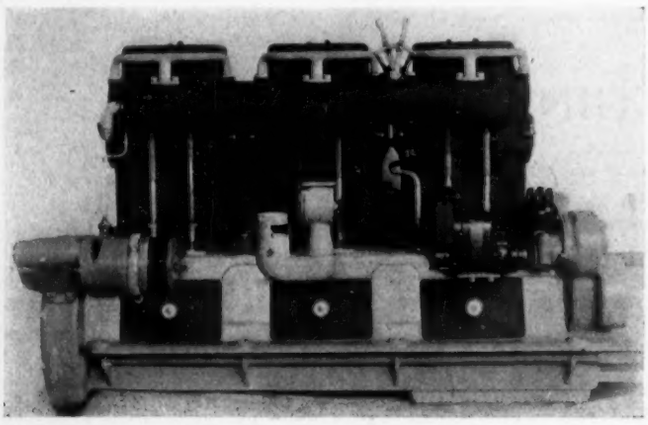
Dual valves in a high speed engine, when combined with the overhead principle and correct designing, increase the fuel efficiency, afford greater economy, and more readily facilitate the burning of the lower grades of fuel now extant. In addition, the dual valve principle admits of greater valve area and the use of smaller valves, which cool more rapidly and thus retain their shape and effective seating.



After end of the new model GR Sterling engine. Notice the special design of base.

The arrangement of the water circulating system contributes also in a large measure to fuel economy. This system differs from general practice in that the water is taken first through a double oil cooler and filter, next through the water jacket of the exhaust manifold, and thence to the cylinder jackets. Finally, having absorbed a considerable amount of heat, it is passed around the gas intake manifold to preheat the gas. The resultant burning of dry gas in a warm cylinder produces unusual fuel efficiency, which averaged, on tests, .51 pounds per brake horsepower hour.

The GR engines are the result of several years of experience with overhead and dual valve motors.



Port side of the model GR Sterling engine, showing intake manifold, magneto, electric starter, etc. The photographer unfortunately did not include the reverse gear end, which is shown in the other picture.

Standard Brings Out New Engines

THE Standard Motor Construction Co. is now building a 50 H. P., 6½ inch by 8 inch 4-cylinder and a 70 H. P. 6½ inch bore by 8 inch stroke 6-cylinder engine. This engine has a higher rotative speed than the regular heavy duty Standard line, turning up about 550 to 600 r. p. m.

The valve in the head construction is maintained with as near a spherical combustion chamber as is practicable. Both inlet valves and the exhaust valves are mechanically operated and the valve operating mechanism is totally enclosed. The cylinders are water jacketed for their whole length and have no valve chambers in them.

The intermediate base is designed so that the crank shaft may be raised and all of the main bearings replaced without removing the base. The cam shaft is set in side bearings attached to the intermediate base so that all that is necessary to remove the cam shaft is to take off the bearing caps. This is also true of the rocker shaft.

(Continued on page 131)

Standard Brings Out New Engine

(Continued from page 118)

The exhaust manifold is made in one piece for each two cylinder section and is on a level with the cylinder head. The exhaust piping to the muffler may be carried from either end.

Ignition is high tension jump spark. An impulse starter is connected with the magneto which allows the engine to be started on magneto, regardless of speed. The builders assure us that the engine speed may be reduced to one revolution per minute and maximum spark efficiency from the magneto still be had.

Compressed air for the whistle or for other purposes is obtained from an air compressor driven by an eccentric from the engine shaft. The reverse gear is the same as on other Standard engines, but is enclosed. The thrust bearing is enclosed in oil, there being a number of thrust disks to distribute the load. The fly wheel is put on the crank shaft with a taper to facilitate removing. The engine is equipped with the regular variable speed governor, and there is also a bronze reciprocating bilge pump running at half the engine speed.

Lubrication is taken care of by a force feed lubricator, with direct tubes leading to every part requiring oil.

In addition to the magneto ignition, there is a separate battery timer and distributor ignition set, running to separate plugs. The engine is regularly equipped with a low pressure air compressor, in addition to the regular air compressor, for a pressure gasoline system.

The engine is furnished regularly with a small six volt generator to take care of battery charging or for a limited lighting service. When desired a large generator and electric starting equipment can be furnished.

The 50 H. P. engine is the standard equipment for the 50-foot Elco stock cruiser and drives her about 14 miles per hour.

A pair of the 70 H. P. engines is regularly installed in the Mathis 82 foot stock houseboat, giving her a speed of 14 miles per hour.

Canada Attempts to Lift the Cup

(Continued from page 98)

jigged up the main peak just before we turned the mark and jibed over with the main boom flat in. And when we hauled on the wind and saw the other fellow well under our lee and dropping to leeward, we were greatly comforted for it was beastly cold." Mr. Smith also pays a

The First Sign of Spring

Don't Wait for Warm Weather

The golf course isn't in good shape yet, the tennis courts are soft, the roads are muddy and it's too cold on the water—but don't stay inside waiting for warm weather.

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tribute to *Mischief's* owner, J. R. Busk, "An Englishman with the most forward and pronounced ideas of a Yankee. What Joe Busk did not know about getting a boat fit for a race was known to 'Than' Clock who sailed her that day and many others."

This race settled the *Atalanta's* hash and the Cup stayed in the custody of the New York Yacht Club. Mr. Cuthbert talked of rebuilding the *Atalanta* and challenging again but nothing came of it.

(To be continued)

British Racing

APPARENTLY the new rating classes established by the recent International Conference at London are not yet under way, for the definite scantling restrictions for some of the classes have not been published. An English yachting weekly states that France and Norway have not yet agreed on the restrictions suggested by the sub-committee of naval architects, and that the restrictions cannot become law until these two countries do agree. As the French 6½ and 8½ meter classes were adopted as International Classes, the British delegates supporting the French in urging them on the Conference, and the Scandinavians found partisans in the British ranks, there is considerable resentment felt by English yachtsmen at the delay. It is rather late to start building for next summer's racing.

Another Old Timer

IN THE "Yachts for Sale" columns of a British contemporary, we find the Herreshoff-built *Niagara* offered for sale. She is now the auxiliary schooner *Japonica* and is fitted with a 30 H. P. motor. She was built at Bristol, R. I., in 1895 and had a successful racing career in British waters for several seasons, though we have heard nothing of her lately. Somehow those old time racers do last surprisingly at times.

Keystone Y. C. Election

AT THE annual meeting of the Keystone Yacht Club of Tacony, Phila., the following officers were elected for year 1920:—Commodore A. B. Cartledge; Vice-Commodore, A. A. Jordan; Rear-Commodore, Samuel Littley; Secretary, Joseph W. Broomhead, 5335 Lesher St., Frankford, Phila., Pa.; Treasurer, F. B. Fisher; Board of Governors, N. Hildesheim, J. E. Moore, C. P. Neveil, G. W. Hughes, T. McKane Jr., J. Hartman, H. Weber, G. Strunk.

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The Foam Discovers Iceland

(Continued from page 116)

latitudes, and are worth a sacrifice. At this moment we have just brought up astern of the *Reine Hortense*, and are getting our hawsers bent, ready for a start in half an hour's time. My next letter, please God, will be dated from Hammerfest. I suppose I shall be about fifteen or twenty days getting there, but this will depend on the state of the ice about Jan Mayen. If the anchorage is clear, I shall spend a few days in examining the island, which by all accounts would appear to be most curious.

I happened first to hear of its existence from a very intelligent whaling captain I fell in with among the Shetlands four years ago. He was sailing home to Hull, after fishing the Spitzbergen waters, and had sighted the huge mountain which forms the northern extremity of Jan Mayen. Luckily, the weather was fine while he was passing, and the sketch he made of it at the time so filled me with amazement that I then determined, if ever I got the chance, to go and see with my own eyes so great a marvel. Imagine a spike of igneous rock (the whole island is volcanic), shooting straight up out of the sea to the height of 6,870 feet, not broad-based like a pyramid nor round-topped like a sugar-loaf, but needle-shaped, pointed like the spire of a church. If only my Hull skipper were as good a draughtsman as he seemed to be a seaman, we should now be on our way to one of the wonders of the world. Most people here hold out rather a doleful prospect, and say that, in the first place, it is probable the whole island will be imprisoned within the eternal fields of ice that lie out for upwards of a hundred and fifty miles along the eastern coast of Greenland; and next that if even the sea should be clear in its vicinity, the fogs up there are so dense and constant that the chances are very much against our hitting the land. But the fact of the last French man-of-war which sailed in that direction never having returned, has made those seas needlessly unpopular at Reykjavik.

It was during one of these fogs that Captain Fotherby, the original discoverer of Jan Mayen, stumbled upon it in 1614. While sailing southwards in a mist too thick to see a ship's length off, he suddenly heard the noise of waters breaking on a great shore and, when the gigantic bases of Mount Beerenberg gradually disclosed themselves, he thought he had discovered some new continent. Since then it has been often sighted by homeward-bound whalers, but rarely landed upon.

Wetproof Shells Are Sure

YOUR true sportsman is willing to take his chances of finding game, but when he DOES get within shooting distance he wants to be sure of his shells.

Remington UMC WETPROOF shells are just what their name implies—proof against wet. Not alone the occasional shower, but the soaking rain and the day-after-day damp of a wet climate.

Remington UMC
for Shooting Right

"Arrow," "Nitro Club," "New Club"—ALL Remington UMC shells are WETPROOF. You can depend on them to work smoothly through your shotgun every time—no matter what the weather.

WETPROOF is an exclusive Remington UMC process. At your service without extra cost.

THE REMINGTON ARMS UNION METALLIC CARTRIDGE CO.
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